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CLIMATE OF ITALY.

DE BURGESS.



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CLIMATE OF ITALY

IN RELATION TO

PULMONARY CONSUMPTION:

WITH REMARKS

ON THE INFLUENCE OF FOREIGN CLIMATES
UPON INVALIDS.

BY

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P R E F A C E.

THE first three chapters of this volume have already appeared in the "LANCET." From the favourable manner in which they were then received by the profession, I have been encouraged to continue the inquiry, and now to publish the whole in a separate form.

The influence of Climate upon health and disease has, of late years, attracted considerable attention ; hence, instead of vague assertions, or traditional fame, authenticated facts, and positive observation, are essential in order to establish the sanitary character and influence of any given climate.

Amongst modern writers on climatology, Sir James Clark in this country; J. F. Schouw, of Copenhagen ; and E. Carrière, of Paris, rank deservedly high. The united labours of these distinguished authors have materially contributed to



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CLIMATE OF ITALY.

CHAPTER I.

GENERAL REMARKS ON FOREIGN CLIMATES.

Mediterranean Climate.—Climate of Malta.—Climate of Madeira.—Variability of the Italian Climate.—Mistake of sending consumptive patients abroad.—Advantages of a well selected locality at home.

PERHAPS no greater popular delusion prevails, than the belief in the existence of some undefinable specific virtue in the climate of Italy, for pulmonary consumption.

Although this mistake has been pointed out by several modern writers on climate, and it is difficult to conceive how so erroneous a notion ever gained possession of the public mind, it still prevails very extensively. Even at the present day, consumptive invalids are hurried away from these islands to the shores of the Mediterranean or elsewhere, with an unbroken faith, or rather blind credulity, in the talismanic efficacy of foreign climates, on the part of their friends and relatives, worthy the days

when the sulphureous vapours of Mount Tabio, near Vesuvius, were supposed to cure phthisis, and patients were sent there to breathe the volcanic air, drink milk, and die. (Vide Fromond Risposta Apolog., p. 438.)

During a recent sojourn in Italy, and in the south of France, I have had frequent opportunities of observing the misery, nay, the positive evil which patients of this class incur by migrating from England to those countries, when labouring under confirmed phthisis. And it is only when the disease is *confirmed*; when the condition not merely of hepatization but of softening exists; that, in the great majority of instances, the patient seeks in a foreign clime that relief or cure which he believes nature has denied him in his own. The fatigue inseparable from an overland journey of some two thousand miles; the discomfort, or rather the total want of English comfort, *en route*, and even in the promised land,—to a person in tolerable health bad enough, but to a phthisical invalid absolute torture,—the severity of the spring and autumn, and, above all, the great and rapid variations of temperature, have sufficiently shown to me the mistake of sending patients of the class referred to, to so great a distance, in search of a bubble, who ought rather to have been allowed to die in peace at home, in the bosom of their families.

But the foreign climate delusion is not confined

to the rich invalid, who can gratify his desire of going abroad, and satisfy himself that all has been done that money can command. The patient in humble circumstances, whose means will not admit of a change of climate, frequently entertains similar views; and perhaps the bitterest pang he feels during the long course of his complaint, is the belief, that the means of cure exist, but that they are, unfortunately for him, beyond his reach. I have met with many examples of this kind, amongst the poor, while attached to a public dispensary, where there was no lack of every variety of chronic disease.

"I am told that I would get well if I could only go for a short time to some warm country," was not an infrequent remark of patients in the last stage of pulmonary consumption.

In pointing out the inutility of the Italian climate for consumptive invalids of this country, I should be sorry to be understood as denying the sanative effects of climate in all diseases. In several affections of a painful and distressing kind, the benefit to be derived from a well-selected and appropriate change of climate is incalculable; but, as Sir James Clark has observed, those beneficial effects are far more strongly marked in dyspepsia, nervous affections, in rheumatism, and in scrofula, than in consumption.

4 GENERAL REMARKS ON FOREIGN CLIMATES.

The climate of Norway, for example, is admirably suited, during several months of the year, between the middle of May and the middle of September, for certain forms of dyspepsia, lesions of the nervous system affecting the mind, or that form of general innervation which results from an overwrought brain, and diseases of repletion. But Norway is little frequented, because it is not fashionable, although it would be difficult to point out a more appropriate occasional residence for the numerous class of invalids just mentioned, than Christiana, with its picturesque environs, sublime scenery, and clear and rarefied atmosphere.

In an interesting paper on the Canadian climate, (published in the *Edinburgh Medical and Surgical Journal*, May, 1844,) by Dr. Allen, of Upper Canada, he observes, "A cold climate is more suitable for consumption than a warm one, and Canada is better adapted than Italy for this class of patients. It is a certain fact, that a scrofulous or consumptive patient is scarcely ever seen in Upper Canada in any shape. The excellence of this elevated region for persons of scrofulous and consumptive constitution seems to depend on its pure, dry, tonic atmosphere, and its entire freedom from marsh miasmata."

The vicinity of the Caves of Kentucky, the climate of which is said to be mild and genial, the island of Cuba, and Vera Cruz, are favourite places of

resort, in the new world, of American consumptive invalids.

It is, however, an *equable* climate, and not an elevated temperature, that is required for phthisis, and unless that desideratum be attainable, the mere temperature will do little good.

That pulmonary consumption is not peculiar to any country, but is a prevalent and fatal disease in all climes and nations, is a fact now fully established; and those who may still feel inclined to place implicit confidence in the powers of climate as a remedy in consumption, have only to consult the valuable statistical reports on the sickness, mortality, and invaliding in the army, to find that there is no immunity from what has been so erroneously called the "English disease" in any quarter of the globe.

CLIMATE OF MALTA.

Malta, for instance, which has long been a favourite resort of phthisical patients, stands prominently forward in the Army Reports, as yielding a high mortality from consumption, amongst the troops stationed there; nor is this to be wondered at when we bear in mind that Malta is a rocky, partly undulating island, elevated in the centre, open, and exposed on the south and east sides, and

consequently the coldness and variableness of the weather, during winter and spring, are experienced to the fullest extent. Although during summer the winds are slight, in autumn the sirocco becomes frequent; in winter and spring fresh breezes from every point of the compass are common, which occasionally increase to heavy gales. But the most striking peculiarity, as Mr. Lawson observes, is, "that when a fresh sirocco has blown for two or three days, it generally lulls rapidly, and after an interval of a few hours, is succeeded by an equally strong breeze from the north-west, which, with regard to its temperature and dew point, contrasts remarkably with the former."

There is much misconception as to the nature of the climate of the Mediterranean. The vicissitudes are extremely trying. The difference between the temperatures of the warmest and coldest months, observes Mr. Lawson, is very considerable, being at Malta nearly equal to, and at Corfu, even greater than at, London. Contrary to the popular opinion in this country, the weather, though often extremely fine, by no means presents that mild and undeviating character usually attributed to it. I have seen the thermometer at Malta stand at 32° for a whole day, with a fresh breeze from the north; and, even in the latter end of March, after a considerable fall of hail, distinct traces of it were found through the streets of Valetta, the chief

town, five hours after it fell. These extremes, it is true, do not occur often; but though the cold be too slight to produce them, it is often sufficient to affect persons in robust health, in a most decided manner; and I do not remember ever to have felt the sensation of cold so acutely in this country as I have done in Malta during a dry, north-westerly or north-easterly wind. The climate presents much the same characters at Gibraltar and in the Ionian Islands. According to the statistical tables, it appears, that from the average of sixteen years, easterly winds prevail annually at Gibraltar, 184 days, westerly winds, 177. Snow and ice are rare; but during the winter months, the cold is keenly felt by those who have been long resident in the place. In the Ionian Islands the winds are much the same as to heat and moisture, but, from the mountainous and rugged surface of the land, are much more variable and irregular than at Gibraltar or Malta. Mr. Spencer Wells, who has resided for several years in the hospital at Malta, corroborates the preceding remarks, as regards the mortality from consumption.

During the year 1842, 813 patients had been under treatment in the Royal Naval Hospital at Malta. Of these 813 patients, fifty-one died within the year.

The following table shows the diseases of the fifty-one who died :—

| | |
|--|----|
| Phthisis | 17 |
| Fever | 6 |
| Diseased kidney | 3 |
| Gangrene of lung | 3 |
| Dysentery | 4 |
| Typhoid pneumonia | 2 |
| Pleuritis | 2 |
| Erysipelas | 2 |
| Cerebral effusion | 2 |
| Injury of head | 2 |
| Pericarditis | 1 |
| Fracture of sacrum | 1 |
| Abscess of liver | 1 |
| Marsh fever | 1 |
| Effects of intermittent fever | 1 |
| Variola | 1 |
| Spinal apoplexy | 1 |
| Caries of cranium and abscess of brain | 1 |
| Total | 51 |

Of 108 cases of diseases of the respiratory organs generally, the majority occurred in the following months:—

| | Cases. | | Cases. |
|-----------------|--------|-------------------|--------|
| March | 11 | July | 9 |
| April | 11 | August | 10 |
| May | 15 | October | 13 |
| June | 14 | | |

With reference to the mortality from consumption in the above table, Mr. Wells observes:—Phthisis alone has caused the death of seventeen patients—upwards of thirty per cent. of the whole of the deaths for the year—being about the average which has been observed in former years. It is

singular that most of these men died during, or immediately after, a prevalence of winds from Syria or Lybia (the Sirocco and Liebeccio), and it has been frequently remarked how rapidly the disease runs its course under the almost poisonous influence of the former.

I have seen in five or six cases men who came in with mere symptoms of bronchitis, and in whom a slight dulness under one clavicle, a little variability in the intensity of the respiratory murmur in the two infra-clavicular spaces, a slight prolongation of the sound of expiration, or a slight increase in its intensity, were the only signs of the commencement of the more severe disease; yet in a month these very men were in a state of incurable phthisis, with dulness over the whole upper part of the chest, loud gurgling sound, and all the general signs of advanced phthisis. In two cases, six weeks was the extreme period from the signs of commencing deposit above enumerated to the fatal termination; and these men, in common with almost every person affected with pulmonary disease, complained greatly of the depressing effects of the Sirocco.

It may be urged, perhaps, in abatement of the foregoing unfavourable results, that they do not apply with equal force in the practice of civil life, and that the class of persons whose means enable them to take advantage of climate, will be able to

secure the advantages of a change to a warm climate without being subjected to the disadvantages under which the soldier laboured ; but so specious a sophism is easily dismissed. The effects of those violent atmospheric changes are felt in the sick chamber of the rich as well as in the hospital or barrack-room of the soldier. The Sirocco makes no distinction. While it is necessary to breathe to carry on life, the baneful effects of this Syrian blast must be more or less felt by all who live within its range.

CLIMATE OF MADEIRA.

Madeira, one of the "islands of the blessed," which Herodotus described as situated on the confines of the earth, in an ocean warmed by the rays of the near setting sun, is now, perhaps, the most frequented of all the foreign depôts for pulmonary consumption, not excepting the Nile. Opinion is divided as to the sanative effects of the climate of this island in tubercular phthisis. Mr. White, a recent non-medical writer on the subject, is enthusiastic in his praises of the climate, and evidently grateful for the blessing of restored health, which he attributes entirely to a sojourn at Madeira. He remarks—"Without advancing any pretensions to medical knowledge, or the physiological effects of climate a residence of many years in Madeira, and

a lengthened sojourn, in pursuit of health, among the most favoured localities of the south of Europe, enable the writer to add his testimony to the decided superiority of the climate of Madeira over all those he has visited. Cold winds, or close sultry weather, are little known, and a continuous summer may be enjoyed without suffering from extreme heat or cold, or a continuance of damp or wet weather." He also observes—"The most remarkable feature of the island is probably the mildness and *equability* of its climate, and its consequently beneficial effects in pulmonary and other complaints." Notwithstanding this eulogium, the writer has some misgivings as to the perfection of the climate, and reluctantly admits that, although so *very equable*, the climate of Madeira is not altogether free from changes, which constitute there, as well as elsewhere, the exciting causes of pulmonary affections. "Pulmonary consumption and scrofula occur among the natives of Madeira," he observes, "but less frequently than among the natives of more changeable climates." Yet in this almost perfect climate, the same writer informs us, that the different eddies or currents caused by the vicinity of the mountains, render either a vane or anemometer of little use; and that the sky cannot be generally so clear, nor the atmosphere so calm, as that of Italy, from the position of the island, and nature of its surface. With all these admissions,

Mr. White is ill pleased at somewhat similar observations put forth by Dr. Mason, another recent writer, on this climate.* Mr. White explains the cause of the latter author's unfavourable opinion of the sanative effect of the climate thus: "Dr. Mason, writing under the morbid influence of active disease, complained bitterly of the cloudy sky, the high winds, and the variability of the climate of Madeira." It is also stated that the position of his instruments was not well chosen. However, a summary of Dr. Mason's observations will enable the reader to form his own opinion as to their merits, and the reliance to be placed on them.

Madeira is pretty generally regarded, in this country, both by the profession and the public, as affording the climate, *par excellence*, for promoting the cure of pulmonary consumption. Dr. Mason, who ultimately fell a victim to phthisis, went to Madeira with the belief that he would recover his health under the alleged sanatory and benign influence of the climate of that island. He remained there nearly two years, during which period he occupied himself most assiduously with meteorological investigations, with the view of showing the real character of the climate, noting down the

* *A Treatise on the Climate and Meteorology of Madeira.* By the late J. A. Mason, M.D.; edited by James Sheridan Knowles. London: 1850.

minutest change which the atmosphere underwent. The result of his laborious researches is a series of observations on the climatology of Madeira, the most elaborate that have yet been published on that subject. But what do they go to prove? Simply, that the popular faith in the virtues of this climate in pulmonary consumption is founded, for the most part, in tradition and romance; that, in short, the climate of Madeira, as regards the cure of phthisis, is as great a delusion as the climate of Italy. I shall place before the reader the leading facts contained in Dr. Mason's work.

The author, having given a minute description of the manner in which the observations were obtained, in regard of time, geographical situation, and the character and local position of the instruments, proceeds to correct the first popular error as to the nature of the climate.

"With respect to the hygrometric condition of the climate of Madeira," says Dr. Mason, "we must enter into some detail, particularly as no one has confirmed Dr. Heineken's observations, which appear to have been greatly overlooked by the medical profession, who persist in regarding the climate as *essentially dry*, whereas, if any confidence can be placed in the data obtained by Dr. Heineken and myself, it must be admitted to be saturated with humidity during the greater part of the year, in which respect its advantages are little superior to

the climate of London, while as regards the action of humidity on the organization, it is infinitely inferior."

The author supports this statement by a series of tables, from which it would appear, that at the temperature of 50° , which is near the mean temperature of London, the air, if saturated, is capable of holding 100 parts of moisture in solution, while, at the temperature of 68° , which is rather above the mean temperature of Funchal in Madeira, it will contain 200 parts, or nearly double what it is able to hold in London.

Madeira has its Sirocco as well as Italy; but the characters of the wind so named in the two localities, although equally injurious, are yet essentially different. The wind, called by the Italians *Sirocco*, which visits Naples and the south of Italy from the opposite shores of the Mediterranean, is hot, *moist*, and relaxing. On the contrary, the wind denominated by the Portuguese *leste*, is essentially hot and dry, and of a highly stimulating nature; so that it soon exhausts those in health by means of its exciting qualities.

By referring to the tables of Dr. Mason having reference to this matter, it appears that the maximum dryness observed during the *leste* is $22^{\circ}.5$, and that the mean of the year, from nine A.M. to nine P.M., only amounts to $3^{\circ}.91$; while if the humidity during the night were taken into account

in calculating the mean dryness, it would be at least one degree and a half less, making the mean annual dryness of the climate only $2^{\circ}.5$, or at most 3° .

And Dr. Mason made other observations in London on his return to this metropolis, which go to prove that London and its vicinity are drier than Madeira at the period of the year (June and July) when they were taken.

Finally, in order to show the dampness of the climate of Madeira, Dr. Mason observes,—“I may instance the impossibility of keeping iron, in any form, from being rapidly oxidized. The different powders, such as opium, squills, &c., soon lose their pulverulent form, and become firmly united into a solid mass ; various neutral salts rapidly deliquesce ; gloves, shoes, &c., soon become covered with various species of cryptogamous plants ; silks become spotted and unfit for use ; pianofortes frequently require tuning ; and the screws of various other instruments, as violins, guitars, &c., become so tight as to be almost immovable.”

The following observation, with reference to the variability of the weather at Madeira, will perhaps surprise the reader :—“The very frequent and remarkable variations in a given series of years, incontestably prove that Madeira is no more to be relied on than any other place for certainty of fine weather, and that it has equally its annual variations of temperature.”

The number of days in which rain falls is set down by all previous writers on Madeira at seventy-three. During the last year of Dr. Mason's residence on the island there were, however, 101, giving a majority of twenty-eight days more than the mean of a series of years. But that year was an exception, the peculiarity of which Dr. Mason attributes to a greater prevalence of continuous wet ; the rain not falling in those violent and intermitting showers so characteristic of this climate, but rather after the manner of our own autumnal season.

Upon the regularity of the land and sea breezes—the north-east and the south-west winds—the salubrity of the island mainly depends ; for whenever there is any remarkable or continued variation of these currents, the health of the inhabitants suffers more or less severely. During the summer months they alternate with great regularity, but during the rainy seasons they are very irregular. Neither is the sky so transparent and cloudless as we have been led to suppose. “On the contrary,” as the author remarks, “it is a rare occurrence to see it clear and free from detached clouds, even for two or three hours together, and this invariably clouded state of the sky is in a great measure dependent upon the height of the mountains for the origin of the clouds and for their course.”

We have already noticed, that during the prevalence of the leste, or sirocco of Madeira, the air

is excessively hot and parching. Within twenty-four hours after this wind has ceased there is a copious fall of rain ; and the author has observed a very strong precipitation of dew three hours afterwards, the atmosphere being reduced from 17° to 7° of dryness on the hygrometer, and at seven the following morning to 2° , while the plants and shrubs were covered with dew. Thus we find, a few hours after the leste has ceased, the whole atmosphere, from being intensely dry, becomes surcharged with humidity.

With regard to the precipitation of dew on the island, the author is altogether at issue with Dr. Heineken, who states that "at the level of the city of Funchal no perceptible dew is produced, but up the mountains it is profuse." According to the observation of Dr. Mason, nothing can be more erroneous than this statement; for when the nights are at all clear, the quantity of precipitation is immense; so that by exposing a common-sized dinner-plate, in a clear evening, several drachms of fluid may at any time be collected in only a few hours; while the shrubs and ground-plants are quite wet with moisture, as from a strong shower of rain, and remain in that condition till after eight o'clock the following morning.

Madeira seems to have no more immunity from disease than other places. Dr. Heineken and Dr. Gourlay both agree that no disease is more common

amongst the natives than pulmonary consumption; and Dr. Mason corroborates that view. He says,—“From my own experience I should be inclined to corroborate Dr. Gourlay’s opinion, that consumption and scrofula are frequent in Madeira; and also to add, that affections of the stomach and digestive organs are very general, being the principal causes of death with a majority of the inhabitants. From what has been stated by writers respecting the salubrity of Madeira, a person might be led to believe that disease was scarcely known there; but I am afraid, that were the subject thoroughly investigated, as it ought to be, few places would be found where the system is more liable to general disorder; while, at the same time, I suspect that the average duration of life would turn out to be inferior to that of our own country.” p. 108.

The fate of the author was a melancholy one, and a telling comment on the blind credulity which prevails respecting the virtues of *foreign* climates in pulmonary consumption. It is briefly related by the editor, in these words;—“Having completed the present work at Madeira, the author determined upon repairing to Nice, the climate of which, as he had been always persuaded, was far better adapted to his case. This step, had it been taken at an earlier period, and in the proper season, might have ultimately led to his recovery. (?) . . . He accordingly embarked for Havre. Proceeding thence

towards Nice, partly by land and partly by river conveyance, they reached Avignon, where they took the diligence, without being aware that there would be no stoppage on the road for refreshments. Some fruit and bread, accidentally provided, was the only subsistence for four and twenty hours. They arrived at Nice as dinner was serving up ; but scarcely had they sat down to it, when Dr. Mason felt himself compelled to exchange the table for his bed, to which an attack of dysentery confined him from that moment, until, after the lapse of a fortnight, his death took place."

How many consumptive invalids have fallen victims abroad to the same delusion !

"The strangers' burying-ground," says Mr. White, "has a melancholy appearance, and one lingers, not unwillingly, among its rich and fragrant flowers, while reading with sadness the simple tale of many who, in the bloom and joy of youth, having sought these shores for a relief to their sufferings, through the influence of its balmy climate, and far removed from the endearing ties of friends and home, have only found that relief in the grave."

If we contemplate the climate theory through the appropriate medium of the natural history of creation, we shall find that the argument is also in our favour. We may seek in vain along the entire range of organized existence for an example of

diseased animals being benefited by removal from a warm to a cold, or from a cold to a warm country. There appears nothing in the book of Nature so violently inconsistent. The fishes which inhabit the waters of the British islands will not thrive in the Arctic seas, nor those of the latter in the ocean of the tropics. The birds of the primeval forests of America generally die in this country, unless reared like hot-house plants; and so with the wild animals which live and flourish in the jungles of Asia or the scorching deserts of Africa.

Man, although endowed in a remarkable degree, and more so than any other animal, with the faculty of enduring such unnatural transitions, nevertheless becomes sensible of their injurious results. For familiar illustrations of this influence, we have only to look to the broken-down constitutions of our Indian officers, or to the emaciated frame of the shivering Hindoo who sweeps the crossings of the streets of London. The child of the European, although born in India, must be sent home in early life to the climate of his ancestors, or to one closely resembling it, in order to escape incurable disease, if not premature death. Again, the offspring of Asiatics born in this country pine and dwindle into one or other of the twin cachexiæ—scrofula and consumption, and if the individual survives, lives in a state of passive existence, stunted in growth, and incapable of enduring fatigue. If such extreme

changes of climate prove obnoxious to the health of individuals having naturally a sound constitution, how are we to expect persons in a state of organic disease to be thereby benefited? In fact, view the subject in whatever light we may, we must eventually arrive at the natural and rational conclusion, that Nature has adapted the constitution of man to the climate of his ancestors. The accident of birth does not constitute the title to any given climate. The natural climate of man is that in which not only he himself was born, but likewise his blood relations for several generations. This is his natural climate, as well in health as when his constitution is broken down by positive disease, or unhinged by long-continued neglect of the common rules of hygiene.

Change of air in his own climate, or removal to one nearly approaching to it, is the natural indication, and will effect whatever good climate can effect in consumption.

"If there be on earth a spectacle of human misery utterly deplorable," says Mr. Whiteside, "it is that of consumptive patients in an advanced stage of that fatal disease, wandering through Italy in search of health. Such I have met, generally unacquainted with the language, the people, the habits of the country: they endure an accumulation of vexations, increase the suffering they had hoped to mitigate, and hasten the progress of a

malady they fondly expected climate would retard or avert. There can scarcely be a question that a residence at home, in a favourable situation, with the consolations of home, would be preferable to a cheerless residence in many parts of Florence, Rome, or Naples, unvisited by the rays of the sun, and unprovided with many conveniences so essential to the confirmed invalid. And yet a patient may be sent abroad at such a period of the year as to render it difficult, if not impossible, when, after a harassing journey, he arrives at his destination, to procure a healthful abode, with a sunny aspect, and some of the comforts he would require. The churchyards in the different towns in Italy, frequented by English invalids, teach a melancholy lesson on this subject."

Of the truth of these remarks I have often had painful evidence, and to which I shall refer by and by. Indeed, Mr. Whiteside's descriptions of the scenery and climate of Italy are always accurate. I travelled, in the autumn of 1846, down the Lago Maggiore, in the same steamer with him, which plies between Baveno and Sesto-Calende, and have since read with much pleasure Mr. Whiteside's very faithful description of the climate and scenery of that beautiful lake and its Borromean Isles.

The rapid and extensive variations of temperature observed in the Italian climate—the absolute

necessity to consumptive invalids of changing their place of residence as the seasons change—the fatigue, discomfort, and risk, attendant upon every such change—and the mania for sight-seeing in cold churches and galleries, which no invalid can overcome, have frequently, during my sojourn in Italy, suggested to me the following reflections:—

1. Has not Nature adapted the constitution of man to his hereditary climate?

2. Is it consistent with Nature's laws and operations, that a person born in England, and attacked by consumption, can be cured by a foreign climate, in every characteristic opposite to his own?

3. Why should a warm climate be preferred to a cold one, if the temperature be equable? the mortality from consumption being less in the latter than in the former.

4. A revolution must take place in the system of every consumptive invalid who goes to Italy, before he can become acclimated; and how many must sink under the probationary process, from fatigue and exhaustion?

5. If a phthisical patient derives benefit from a foreign climate, he should never leave it; for it is obvious, if he returns to his native climate, his constitution will be again changed or remodelled, and he is then rendered obnoxious to the same physical causes which originally produced his complaint.

6. The rapid variations and extensive range of

temperature peculiar to warm climates greatly counterbalance their alleged good effects.

7. It is more in accordance with Nature's laws to believe that when *change* is necessary in cases of consumption, a modification of the climate in which the patient and his ancestors were born and reared, or, in other words, *change of air in the same climate*, by removing from one locality to another, more appropriate to the patient's condition, will effect greater good than any violent transition to warm countries.

The purpose of this volume, then, is to show that to send *consumptive* patients to Italy, or to the south of France, for the benefit of their health, is a mistake; and that the climate of the United Kingdom, as yet very partially and imperfectly understood, will afford to the English consumptive invalid as great, if not greater chances of recovery than that of either of the former countries, provided a proper locality be selected. I shall point out by and by the peculiarities of the climate of each of the favourite places resorted to on the continent, by the above-mentioned patients, and their injurious effects.

CHAPTER II.

ON THE CURABILITY OF PHTHISIS.

Curability of Phthisis.—Baths of Panticosa in the Pyrenees.—Nature of Phthisis.—Effects of cod-liver oil, and phosphorus.—Action of warm climates on the functions of the skin and lungs.

THAT pulmonary consumption, even in its advanced stages, is frequently cured by the efforts of nature, is a fact established by *post-mortem* examination, and authenticated by some of the most distinguished practitioners who have specially investigated the pathology of that disease. Unhappily, however, it is equally well ascertained that hitherto no system of treatment can arrest, in every case, the deposition of tuberculous matter, or permanently stay the progress of that direful malady to a fatal termination. Remedies, no doubt, have been recommended in abundance ever since the dawn of medicine, and vaunted as unerring cures for phthisis; but the invariable result of inquiry into the virtues of those remedies, only proves the deceitfulness of hasty conclusions, or the errors of the human mind.

Could it be otherwise? No single remedy can possibly prove effectual, in a disease like consump-

tion, which, from its commencement to its termination, often presents so many and such varied characters and indications. Indeed, the nostrums of the middle ages, however absurd they may justly appear to modern physicians, were imagined as not less successful in effecting a cure than those which the credulity of the nineteenth century has patronized. The wet sheets, or "water-cure" of the mountains of Silesia, had their counterpart in the "earth-bath" of the Moorish kingdom of Granada, as prescribed several centuries ago for phthisis; for we are told by Francesco Solano, (*Origen Morbosus Capitul.*, v. p. 174, et *Lapis Lydos Apollinis*, p. 231,) in support of the specific effect of this remedy, that he himself "cured hectics which had been judged incurable by thrice using an *earth bath*," and this he performed in the following manner: He caused a pit to be dug in the earth, where no plants had been sown; in this pit he placed the patients up to the neck, then covered them with the same earth which had been dug out, and there left them until they began to shiver. While they remained in this pit he gave them food if they wanted any. As soon as they began to shiver, he caused them to be taken out of the bath, and wrapped in linen cloth, saturated with rose-water. After two hours, the whole body was rubbed with the *unguentum resumptivum* of Zacutus Lusitanus. The rationale of this treatment was, that the earth extracted and

absorbed the virus of the disease, a theory quite as simple and plausible as the more recent, yet equally absurd, *methodus medendi* of Vincent Priessnitz.

But modern Spain has also its mountain cure. The sanative fame of the climate of Malaga, and of the orange-groves of Seville, is disputed by the marvellous accounts current of cures effected by the waters of

PANTICOSA.

The remote and strangely situated Spanish baths of Panticosa, in the heart of the Pyrenees, five thousand feet above the level of the sea, are considered by the Spaniards as an almost infallible remedy in cases of *far-gone* consumption. If half that is related by patients and ex-patients as to the wonderful efficacy of these waters be true, their virtues ought to be far more widely known than they are. These baths are an eight hours ride from Canteretz, in France, and considerable difficulties are to be surmounted in reaching them—by a bridle-path, and on mules. At the spot where the baths stand, at the head of the mountain valley, there is a small lake, formed by the cascades, which, five or six in number, come tumbling down the mountain side to form the infant Galego. A more desolate scene than that which surrounds the baths of Panticosa it is impossible to conceive. When the north wind does not blow, the climate is mild.

At Jaca, a gentleman was pointed out to me, who had been carried to Panticosa, so far gone in consumption that on his arrival there was no time lost in administering to him the last sacrament. Seven years had elapsed since then, and he is now to all appearance, and according to his own testimony, in complete health.*—Priessnitz, in his palmy days, could do no more.

What is the nature of pulmonary consumption? Andral considers tubercle, the elementary lesion of the complaint, to be formed by a small drop of pus, or of a fluid resembling it, having no consistence at first, but gradually acquiring a degree of firmness, and terminating, at length, in a small round mass, presenting the appearance of tubercle. Cruveilhier and Lallemand have also endeavoured to establish that pulmonary tubercle is nothing but concreted pus. M. Louis objects that if the pus does appear concreted at the beginning, it is owing to its being infiltrated into the pulmonary parenchyma. "Tubercle," says M. Louis, "is not the result of inflammation. The grey semi-transparent granulation is the first degree,† or the nucleus of

* Correspondent of the *Athenæum*.

† M. Lebert says, in his admirable work on *Scrofulous and Tuberculous Diseases*, that the first appearance of tubercles in the lungs is not necessarily in the form of the "grey granulation." He has repeatedly seen the disease announce itself in these organs in the form of yellow

tubercle, and is developed in the pulmonary cells." Crude tubercle is thus defined by M. Louis:—"After the grey granulation has attained a certain size, a yellow spot appears, most frequently in its centre, which increases daily, and finally envelops the whole of the grey substance; when fully developed, it is of a circular form; it varies in size, from that of a small pea to that of a pullet's egg; it is of a yellowish white colour, of variable consistence, very friable, yielding under pressure of the fingers like cheese, and presenting no trace whatever of organization or of texture." The chemical composition, according to the most correct analysis, is:—

| | |
|-------------------------------|----------------|
| Animal matter | 98 |
| Muriate of soda | 0.15 |
| Phosphate of lime } | 1.85 |
| Muriate of lime } | |
| Oxide of iron | slight traces. |

With regard to the curability of phthisis, Bayle, who has well described the disease, regarded it as fatal. Laennec subsequently modified that opinion. According to his view, the progress of tubercles cannot be arrested in the first stage, but in the second phthisis may be cured, either by the trans-

miliary tubercles, small and firm, and evidently unconnected with the grey granulation. The author says, that this observation is confirmed by the fact, that tubercle most frequently commences in the lymphatic glands and submucous cellular tissue of the intestines in the form of the *yellow granulation*.

formation of the tubercular deposition into cretaceous matter, or by cicatrization of the pulmonary excavation. On the other hand, Fournet, and recent writers, have advanced an opinion directly opposite to that of Laennec, and consider that it is at the first period, and as near as possible to the commencement of the disease, that it may be cured. However, the majority of these investigations go to prove that tubercles may be transformed into a substance which is inert, and that pulmonary tubercles may be cicatrized. But the medium by which this transformation and cicatrization is accomplished is not known. Professor Bennett, of Edinburgh, whose researches are always worthy of attention, considers pulmonary consumption to be a blood disease, and the result of inflammation. He says:—"There is first an impaired state of nutrition causing alteration of the blood; secondly, a local change, which some say is inflammatory, others not. This local change ushers in, or accompanies the tubercular deposition, and is, in my opinion, in its essential nature, inflammatory (understanding by that term, an exudation from the blood)."

To Dr. Bennett the profession is indebted for the revival of a very valuable remedy in the treatment of phthisis. His "Treatise on Cod-Liver Oil," published in 1841, attracted the attention of practitioners to the subject, in which he remarks:—"The remedy is no certain specific, but a sufficient number

have recovered to assure him that the oil is of great value in such cases."—p. 135. The *modus operandi* of the oil, he observes, may be said to consist in stimulating the lymphatic glands and vessels, and by this means increasing the activity of the capillary system. By its action on the former, the process of assimilation is facilitated, and the appetite increased. The quality of the blood is thus improved, and so, lastly, the different organs of the body become better nourished, and receive more *turgor vitalis*.

It was not, however, until the publication of a valuable paper on this subject, in January 1849, by Dr. C. J. B. Williams, that cod-liver oil attracted the universal attention of the profession. The result of an extensive experience led Dr. Williams to state, "that the pure fresh oil from the liver of the cod is more beneficial in the treatment of pulmonary consumption than any agent, medicinal, dietetic, or regimenal, that has yet been employed. Out of 234 cases carefully recorded, the oil disagreed, and was discontinued, in only nine instances. In nineteen, although taken it appeared to do no good; whilst in the larger proportion of 206 out of 234, its use was followed by marked and unequivocal improvement; this improvement varying in degree in different cases, from a temporary retardation of the progress of the disease, and a mitigation of distressing symptoms, up to a more or less com-

plete restoration to apparent health. The most numerous examples of decided and lasting improvement, amounting to nearly 100, have occurred in patients in the second stage of the disease, in which the tuberculous deposits begin to undergo the process of softening. The most striking instance of the beneficial operation of cod-liver oil in phthisis, is to be found in cases in the *third* stage—even those far advanced, where consumption has not only excavated the lungs, but is rapidly wasting the whole body with copious purulent expectoration, hectic, night sweats, colliquative diarrhoea, and other elements of that destructive process by which, in a few weeks, the finest and fairest of the human family may be sunk to the grave. The power of staying the demon of destruction sometimes displayed by the cod-liver oil is marvellous.” *

A few years ago, these statements would seem fabulous. I have seen several cases of “far-gone” consumption, such as Dr. Williams describes in the third stage, which seemed about to prove fatal, attended for a certain time by the same marvellous results he mentions, after taking the oil for only a few weeks; but, in the course of a year or eighteen months, each of these cases retrograded, the oil seemed to lose its effect, and however useful it might be as a palliative and temporary stay to the fatal progress of the complaint, the results went

* *London Journal of Medicine.* January, 1849.

to show that cod-liver oil is no specific for pulmonary consumption. The highly nutritious character of this oil, and the property of fattening those who take it for any length of time, would indicate that it is through the process of nutrition it acts beneficially in tubercular disease.

If consumption is, in the first instance, the result of malnutrition, as I believe it to be, subsequently deteriorating the blood, the remarkable property which the oil possesses of depositing fat, and arresting, almost immediately, the process of waste, goes to support that view. Dr. Williams suggests that the oil has also the property of increasing the animal principle of the blood, especially the albumen, and of reducing the fibrin, which is generally high in phthisis, and he believes that its salutary action is not that it supplies fat where it is wanting, but that it supplies fat of a better kind, more fluid, more divisible, less prone to change, and more capable of being absorbed into, and of pervading the structures of the body. Further and more extensive observation, however, is required to substantiate this theory. Meanwhile, all that our present knowledge enables us to state positively on the subject is this : cod-liver oil is the most effectual stay to the progress of consumption, in a great majority of cases, that we possess ; this salutary action is not always lasting, and there are cases in which its administration cannot be borne,

and others in which it produces no good effects whatever. In those cases in which the stomach rejects the pure oil, if it be given in combination with phosphoric acid, it will generally be borne easily, and the acid will assist the tonic action of the oil.

M. Lebert is of opinion that the salutary action of cod-liver oil is much more marked and decided in scrofula and rachitism than in pulmonary consumption, and although he has observed beneficial results from its employment in some cases of the latter complaint, he has seen it fail in many others.*

RATIONAL TREATMENT.

As empirical means have notoriously failed in accomplishing a cure, or in effecting any other result than of proving that the pathological conditions characteristic of phthisis can never be overcome by blind adherence to any particular remedy; and seeing that the disease is often cured by nature, the next indication is, evidently, to study the method whereby nature operates, and so endeavour to establish a rational treatment, based on the general pathology of this disease. Observation of the different states of transition of tuberculous

* *Traité Pratique des Maladies Scrofuleuses et Tuberculeuses.* Par H. Lebert. Paris: 1849.

matter, in its progress towards a natural cure, as revealed by morbid anatomy, as also by subsequent chemical and microscopical examination of this matter, appear to me to afford a more legitimate field for pursuing inquiry into the curability of phthisis, than the hap-hazard system of administering a variety of drugs, in the hope that some of these remedies may prove beneficial.

The curative effects of climate, to say the least, seem quite as doubtful as those reported of medicinal agents. The vulgar opinion is, that in migrating from a cold or temperate to a warm climate, the phthisical patient is thus enabled, by breathing a mild and soothing atmosphere, to give nature time and opportunity to heal the tuberculous ulcer, to arrest any further progress of the malady, and, lastly, even to revolutionize the system. But this absurd theory is erroneous, since it is through the skin, not the lungs, that a warm climate operates beneficially. In my opinion, the free action of the skin, whilst it continues, relieves the lungs, kidneys, and liver, by derivation. Should the atmosphere, however, suddenly change, become oppressive, or its temperature sink, and thus produce a chill, as often happens in Italy, whereby the cutaneous transpiration is instantly checked, the skin then becomes dry and hard, so that the respiratory organs suffer from the excessive action they now undergo, for the matter of transpiration must be

eliminated through the lungs if the action of the skin be interrupted. The instantaneous relief which free perspiration often effects in cases where difficult breathing and oppression of the chest have been produced by artificial heat, is well illustrated by the experiments of Du Hamel, Tillet, Fordyce, and other observers. Rooms were heated by flues in the floor; there was no chimney, nor any vent for the passage of air, excepting through the crevice at the door. The experimentalists went into these rooms as soon as the thermometer indicated a degree of heat above that of boiling water. The first impression of this heated air upon the body was exceedingly unpleasant, causing a sense of oppression, short breathing, and a suffocating sensation; but after a few minutes all this uneasiness was removed by the breaking out of copious perspiration, although the thermometer had risen as high as 220° Fahr. In other experiments it was also found that a temperature of even 260° Fahr. could be borne with tolerable ease for ten or twelve minutes when the skin was acting freely.

ACTION OF WARM CLIMATES ON THE SKIN AND LUNGS.

The important influence which *temperature* exerts over the vital functions of the animal economy, is a leading point to be taken into considera-

tion, while contemplating the sanative effects of climate.

The faculty of enabling and enforcing one organ to perform the function of another, for the purpose of carrying on life, is not the least wonderful of the effects of heat upon the human system. Thus, for example, in cold and temperate climates the functions of the lungs and kidneys are extremely prominent, and those of the skin and liver less so. But in warm climates the skin assumes a more extensive function, and by its activity compensates for the diminished action of the lungs, liver, and kidneys observable in those regions. The eliminating or depurating action on the blood being performed by different sets of organs in both instances.

In cold climates the lungs and kidneys are the chief agents in this process; in warm countries the skin and intestinal mucous membrane. In the transition from a warm to a cold climate, or *vice versâ*, the future health of the individual will mainly depend on the facility for the transposition of functions from one organ to another, which his constitution possesses. If, from some peculiarity of constitution, or from being placed in unfavourable circumstances, the different organs of the body are not prepared to act in concert with the new medium by which it is surrounded, and the system is unable to adapt itself immediately to the sudden change from one extreme to the other, the

original disease will be aggravated, or a new one generated. Thus, for example, when an inhabitant of these islands migrates to a warm country, considerable vascular and nervous excitement of the system is an almost immediate result as the initiatory movement in the process of acclimatization. The functions of the lungs and kidneys become diminished, and those of the skin and liver greatly increased. As pulmonary exhalation, or perspiration by evaporation from the lungs, is now greatly impeded, the effete elements of the blood usually thrown off by the respiratory organs must seek another vent, and nature at once sets about converting the *skin* into a compensating depurating agent. And here an important fact presents itself for consideration. I allude to the difference in the organization of the skin in the natives of the temperate zone, and in those of inter-tropical countries. In warm climates the diminished perspiration by evaporation is compensated for by increased transudation, or sweat, and accordingly we find that nature modifies the organization and functions of the skin to meet that end.

This modification of function and its results upon the economy are well put by Dr. Copland in the following words: "The *skin* of the dark races is not only different in colour, but it is also considerably modified in texture, so as to enable it to perform a greater extent of function, than the

more delicately formed skin of the white variety of the species. The thick and dark *rete mucosum* of the former, is evidently better suited to the warm, moist, and miasmal climates of the tropics, than that with which the latter variety is provided.

The skin of the Negro is a much more active organ of depuration than that of the white. It not only exhales a larger portion of aqueous fluid and carbonic acid from the blood, but it also elaborates a more unctuous secretion, which, by its abundance and sensible properties, evidently possesses a very considerable influence in counteracting the heating effects of the sun's rays upon the body, and in carrying off the superabundant caloric. Whilst the active functions of the skin, aided by the colour, thus tend to diminish the heat of the body, and to prevent its excessive increase by the temperature of the climate: those materials that require removal from the blood are eliminated by *this surface*, which, in the Negro especially, performs excreting functions, very evidently in aid of those of respiration, and of biliary secretion. In the white variety of the species, on the other hand, the functions of the lungs and liver are much more active than in the darker races, changes to a greater extent being performed by respiration in the former than in the latter."

From the preceding remarks, it is evident that the well-being of Europeans in *ordinary health*, on

their arrival in tropical climates, mainly depends for its continuance, on the facility with which certain functions are increased and modified so as to adapt the system to the new medium, and of these, the most important by far is that of the *cutaneous surface*. If they are in a state of disease on their arrival in warm climates, the disturbance of the system, necessarily accompanying the transposition of functions, will be more profoundly felt, the process of acclimatization more difficult of being accomplished, and the risk of life greater.

It is not an elevated, but an equable, temperature that consumptive patients require; and this desirable atmospheric condition most certainly is not often found in Italy. A low degree of temperature, with a limited range, will give more permanent ease to persons having diseased lungs than a climate of even the most genial warmth, if subject to rapid and extensive variations. No climate whatever is perfect, nor are the natives anywhere free from consumption—not even the much-lauded Madeira—the *Ultima Thule* of hectic invalids. Then why expect that any foreign climate will work something like miraculous results, by curing phthisis?

It appears inconsistent with the laws and operations of nature to assert that the country in which an individual was born, reared, and had previously

enjoyed good health, is no longer suited for him when afflicted with organic disease. That, forsooth, the Esquimaux must cross the Line to cure his consumption; or the native of central Africa, affected with phthisis, proceed to Lapland for a similar purpose. In short, that nature has maliciously placed man in every clime but the one best suited to his health and happiness; for, when sifted, this is the conclusion deduced by the advocates of the foreign climate theory.

Although judicious medical treatment, even with the adventitious aid of the most healthy climate, cannot always prevail against the destroying influences of tubercular consumption, yet nature proves, by the frequent spontaneous cures of that disease, that the malady does not, in every instance, *necessarily* advance to a fatal termination.

If, then, instead of trying remedies from a blind impulse, we would follow the direction of reason, and of observation *post mortem*, of the processes of spontaneous cure, and so let art follow nature in the treatment of phthisis, I think we should more likely arrive at permanent practical results than by devoting our energies entirely to the discovery of single remedies for the cure of this complaint.

The sugar of roses of Avicenna,—the blood-stone (*lapis-hæmatitis*) of Alexander Trallianus,—or the infallible "*corallatum dulce mercurius*," the virtues of which, in pulmonary consumption, Van

Helmont says, were inscribed upon the tomb of Paracelsus, (*Humid. Radicale*, p.575,) have scarcely been excelled in delicacy or therapeutic effect by any recently-discovered specific, even under the inspiring light of modern science.

In concluding these prefatory remarks, I cannot quote a more appropriate or instructive observation than the following philosophic axiom of the illustrious Boerhaave—"Physic is never of greater service to mankind than when it can follow the footsteps of Nature in the cure of diseases."

CHAPTER III.

Route to Italy through the South of France.—Climates of Provence, Aix, Montpellier, Marseilles. — Erroneous ideas prevalent respecting the salubrity of those places. —Climate of Nice.

CLIMATE OF PROVENCE.

THE favourite route to Italy of the consumptive invalid has hitherto been *via* Languedoc and Provence, the climates of which, for a long period of time, enjoyed a celebrity scarcely inferior to that of Italy itself.

Although the towns of Aix and Montpellier afforded convenient resting-places for the exhausted pilgrims to refresh themselves when half way on a long and fatiguing journey,—if indeed the alleged sanative influence of the climate did not induce the invalids to remain altogether,—I am yet utterly at a loss to conceive how either of those places ever obtained a name for salubrity; as I really know of no place more unfavourable for patients suffering from organic disease of the lungs, than the far-famed, and much-frequented depôts of consumption—Aix and Montpellier.

In this part of France, there is generally a clear

blue sky, but then, the air is sharp and biting, especially in the spring, and the frequent recurrence of the noxious winds—the *bise* and the *marin*—one cold and cutting, the other damp, irritates weak lungs, and excites coughing. No atmosphere, however pure, if occasionally keen and piercing, can prove beneficial for pulmonary consumption, and this is the true character of the air of Montpellier. Provence is, moreover, the land of dust, from the nature of the soil. Indeed, there are parts of this “Province of the Sun,” popularly so called, which might vie, in whirlwinds of dust, even with the banks of the Nile, the most recent foreign fashion for consumption.

THE MISTRAL.

The south of France has been, ever since the earliest period of history, famous for violent and impetuous winds, amongst which the north-west wind, or *mistral*, enjoys an unenviable pre-eminence for its injurious character. This wind, or plague, as it is called by the inhabitants, forms the subject of an ancient Provençal proverb, which says:—

“Le parlement, le *Mistral*, et la Durance
Sont les trois fléaux de la Provence.”

And the description of it given by Strabo has not been invalidated by time, for it is now the same as

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when he described it thus :—"The whole of that region situated above Marseilles and the mouths of the Rhone is exposed to impetuous winds. The north-west (mistral) precipitates itself with intense violence in the valley of the Rhone, driving stones before it, overturning men and their vehicles, and stripping them of their clothes and arms."—(Georg. lib. iii.)

There is not, throughout all Europe, so arid, so monotonous, and in every way so unattractive a region for consumptive invalids as the Provence of Radcliffe and De Staël, when entering from Italy by the treeless, dust-enveloped road. In the midst of a region of low, calcareous undulations, producing dust in astonishing quantities, stands Aix, the capital of Provence. From Aix to Arles, extends the barren, stony plain of the Crau, presenting a picture of utter desolation, without any variety whatever to interrupt the horizon. This picture seems, doubtless, a violent contrast to the seducing descriptions we have been accustomed to read of the "smiling vineyards, olive-groves, limpid streams, and verdant valleys of sweet Provence," but the fact is not the less true. Leaving the dusty roads and arid and dust-covered fields even out of the question, the rapid and extensive *variations of temperature* met with in Provence are more than sufficient causes to make that part of the continent shunned by consumptive invalids.

For several days in spring the climate may no doubt be delicious, although, however, always too warm about mid-day, when suddenly the mistral, of evil celebrity, begins to blow. It is difficult to give an adequate idea of the change, or of the injurious effects of the climate under the influence of this scourge. The same sun shines in the same bright blue sky, but the temperature is glacial. The sun is there only to glare and dazzle, and seems to have no more power in producing warmth than a rushlight against the boisterous winds which chill the very marrow in one's bones. During the prevalence of this wind it is impossible to stir out of doors without getting the mouth and nostrils filled with dust. All nature seems shrivelled and dried up under its baneful influence.*

The district of the mistral is nearly confined to the valley of the Rhone. The baneful effects of this wind are dreadfully felt at Marseilles, at Aix and Montpellier in a less degree, but still sufficient to cause much mischief to the class of patients under consideration. Although Arles seems to be its head-quarters, the vast plains of the Crau and the Camargue afford full scope to its fury. The general character of the climate of Provence is, then, hot, dry, and irritating, subject to sudden and extensive variations of temperature, and therefore highly injurious to phthisical patients, and those suffering

* Vide *Athenaeum*, April, 1850.

from irritation of the stomach and air-passages. For nervous and hypochondriacal invalids, the dryness and bracing qualities of the air of Provence may be, perhaps, useful, provided their lungs are sound; but if there is the slightest tendency to tubercular disease, no patient should ever go to that country, for I know of no district in any part of the British isles so unfitted—nay, so injurious—for patients of this class, as the parched and dusty plains swept by the mistral. There is actually no part of France where phthisis is so prevalent amongst the native population as in Montpellier and Marseilles; in the latter especially, where the ravages by this disease, amongst the youth of both sexes, are very great.

Hyères, a small town, near Toulon, and within a mile and a half of the Mediterranean, is considered to be less trying to consumptive patients than any other part of Provence, because vegetation is more luxuriant, and there is little dust; but still the mistral extends its baneful influence to the olive and orange plantations of Hyères, as well as to the arid plains of the Crau.

CLIMATE OF NICE.

It has long been a disputed question whether the Var or the Alps form the real separation between France and Italy, and, consequently, whether Nice

forms part of Provence or of Italy. The territory where Nice now stands, near where the Var falls into the Gulf of Genoa, was part of the ancient Liguria, and lies close to the Roman road called the *via Aurelia*, which passed from Rome to Arles, through Tuscany and over the maritime Alps.

The character of the climate of Nice is in great measure determined by the manner in which the town is almost surrounded and protected on every side, excepting the south, by part of the maritime Alps called Amenes. On the south side it is open to the Mediterranean and its capricious winds, and, as might be inferred from the geographical position of Nice, the climate very closely resembles that of Provence, the modification depending mainly upon the circumstance of the former being screened from the north wind by the surrounding heights; hence the cause of the luxuriant vegetation in the neighbourhood, which in some parts quite equals that of the tropics.

The valley or basin in which Nice is situated has been compared by M. Carrière, a recent writer on the southern climate, to an open fan, the arch of which is formed by the mountains, and the point by the shore, where the Var discharges itself into the sea.* The beach has a southern aspect, and the semicircle of mountains and hills in the rear

* *Le Climat de l'Italie, sous le rapport Hygiénique et Medical.* Paris: 1849.

protects the valley, in great measure, from the east to the west, including therein the different intermediate points. It is in this basin, amongst the hills and valleys with which it is studded, that vegetation flourishes with more than Italian profusion and luxuriance. The mountainous semicircle in which Nice is embosomed is unfortunately interrupted or indented in some parts, which admit the winds when blowing from certain points, and those the most unfavourable for consumptive invalids. Having once passed the barriers, these winds sweep down the ravines and valleys with great impetuosity, so that vegetation, as well as invalids, soon shows marked signs of their injurious effects.

The most frequent winds at Nice are the south-east, the north, the east, and the north-east. Their annual duration, according to Roubaudi, is as follows:—The south, one hundred and twenty-five days; the east, eighty; the north, fifty-two; the west fifty; and the south-east, thirty. Amongst the occasional winds which visit this district, there is one which the mountains of Provence cannot keep out, and whose baneful influence I have already described. I allude to the north-west, or mistral, the scourge of the Mediterranean shores of France and Sardinia. This wind is considered as the most violent and impetuous of all the winds prevalent in the valley in which Nice is situated.

It may continue for three, seven, or nine days at a time, or it may disappear in twenty-four hours, its duration varying between these periods, and is always uncertain. In the order of frequency during the autumn and winter seasons, the mistral occupies a prominent place. In winter, it blows as frequently as the north-east, the west, and the north, the prevailing winds of the season. In autumn, the mistral blows more frequently than the two other autumnal winds, the north and east. The great prevalence of the north-west wind, or mistral, in winter and autumn, exercises a most injurious effect upon the climate, and shows the folly of consumptive invalids seeking at Nice the advantages of a mild temperature and calm atmosphere during these seasons.

The north and north-east winds, frequent in the cold seasons, are not impetuous, like the mistral, but they still partake of some of its defects. The north is dry and piercing, especially in spring. The north-east is also cold, and perhaps more injurious to health than the former, as it does not, like the north wind, pass over the valley to temper its biting coldness in the waters of the Mediterranean. The southerly winds, with the exception of the south-east, (*libeccio*), are soft, humid, and gentle. The south, south-east, and analogous winds, when they blow strongly, produce the same effects at Nice as are developed along the coast of Genoa,

during the prevalence of the sirocco in the summer or warm season. These winds, happily of rare occurrence, are, M. Roubaudi observes, as injurious to man as to vegetation. Delicate persons, of a nervous temperament, especially females and hypochondriacs, are profoundly affected by them, as the whole system becomes relaxed, and overwhelming feelings of languor and oppression seize the invalid. In the winter of 1838, they blighted the olive trees, cauterized the stem, arrested the circulation of the sap, and caused the olives to fall from the trees.

The south-east wind, or sirocco, so depressing and injurious on the continent of Italy, becomes singularly metamorphosed during its transit across the Mediterranean to Nice. This wind, which is the scourge of Italy, is here changed into a mild, Favonian breeze, and generally ushers in the fine weather as summer approaches. It is always cool and gentle, and instead of being injurious, appears beneficial to the climate of Nice. In winter, it modifies the cold; in summer, it tempers the heat and dryness of the air. During the latter season, the south-east wind prevails periodically at Nice. In short, the sirocco seems to be here so altered and modified, by some inexplicable cause, as to present the ordinary characters of the west wind. Indeed, the enthusiasm of Risso, and especially of Roubaudi, would lead one to view it as a veritable

“alézé Méditerranée,” soothing to the patient’s feelings, and tempering the summer heat.

But one of the greatest vices characterizing the climate of Nice, if not the greatest, is the remarkable variation of temperature noticed between day and night—in the sun and in the shade. The land or continental winds prevail during the night; the southerly or maritime during the day. The former are cold and dry; the latter soft and humid. As soon, therefore, as the former subside, and the sun rises in the horizon, the humidity commences to show itself in the atmosphere; whilst, on the contrary, when the diurnal winds cease and the sun sets, the above hygrometric condition of the air disappears. These alternations of cold and warm winds, and their influence upon the moisture of the atmosphere, explain the regular appearance of those evening clouds at the period of sunset, tinting the sky in the western horizon with so many rich and varied hues.

M. Roubaudi estimates the annual mean fall of rain at twenty-six inches, the greatest fall in his observation being forty-five inches. He observes on this point: “It is by no means rare, at certain periods of the year, especially towards the equinoxes, for immense quantities of rain to fall continuously, so as give five inches in the space of twenty-four hours. The rain is sometimes so dense, so rapid, and copious, as to give half an inch in the

space only of ten minutes. During the winter of 1837-38, fifteen inches fell in fifty hours, as much as sometimes falls in an entire year." We have then seen that the mornings and evenings are much colder than the middle of the day—a change which cannot be beneficial to consumptive invalids.

There is another circumstance connected with these changes of wind which augments the evil. A violent struggle frequently occurs between the maritime and continental winds at the period of transition. This is often aggravated by the accidental concurrence of auxiliary winds, and the result is a violent atmospheric commotion, disturbing the elements, the effects of which are felt in every part of the valleys around Nice. During the existence of this phenomenon, the temperature becomes as much disturbed as the elements themselves—capricious as the winds, which are struggling for preponderance, it indicates, within a short space of time, heat and cold with all the intermediate changes. The transition is sometimes accompanied by a perfect hurricane, during which violent explosions of electricity take place, and the declivities and adjacent valleys are swept by impetuous gusts of wind. As soon, however, as the northerly wind gains the ascendancy, all is quiet in an instant; the heavens become perfectly serene, and for the moment nature seems at rest.

A third form of this transition state, still more

injurious to invalids, as M. Carrière remarks, is worthy of notice. During the alternations from heat to cold, and from cold to heat, morning and evening, the humidity suspended in the atmosphere, and precipitated on the earth, produces the following effects :—

The dew which falls in the evening is often extremely chilly—so much so as to penetrate the clothing in the same manner as occurs on part of the Italian coast. The hoar-frost which covers the earth in the early part of winter continues for some time after sunrise, producing a hazy state of the atmosphere, and impregnating the soil with moisture ; wherefore exposure to the open air should be carefully avoided by the consumptive invalid until the temperature is sufficiently elevated to dissipate the hoar-frost, dry the earth, and soften the sharpness of the air. The mornings and evenings are often treacherous, even when the climate seems otherwise in its most favourable condition ; and if persons of strong constitution can expose themselves with impunity at these periods, invalids should guard against following such examples, as they may undo in a moment whatever benefit they had previously derived.

The climate of Nice is not so essentially dry as it is described to be by some writers. The continental winds which prevail during the night are no doubt dry, but then the maritime winds of the

day are humid. The temperature is moderate, and between the hours of eleven and four in the afternoon, when undisturbed by violent winds, it preserves a certain degree of equability, so unlike that which obtains morning and evening. M. Carrière cannot understand why the English prefer Nice to other parts of the continent of a milder and more favoured climate, "unless it be from the circumstance of the English disease being generally of a scrofulous nature." Nevertheless, he adds, the mortality annually amongst the English colony at Nice is sufficiently discouraging to deter other hectic invalids from going there. For persons of a nervous temperament, this author considers the climate of Nice decidedly injurious. Hence he recommends the French to proceed farther south, to a soil and clime more adapted to their organization ; but, at the same time, expresses his astonishment that Sir James Clark has not mentioned the beneficial effects of the climate in those "cases of the spleen and melancholy so peculiar to his countrymen !"

LA CROIX DE MARBRE.

The suburb of Nice inhabited by the English, is called the Croix de Marbre, and a more injudicious selection could not be made for the site of a residence for invalids labouring under diseases of the

respiratory organs. This locality runs in a line with the beach of the Mediterranean, on the side nearest to France. It is exposed to the libeccio, and the winds blowing from France drive before them the vapour and dense fogs which rise along the banks of the Var. But the most formidable antagonist the consumptive invalid has to contend against is the blighting effects of the mistral, to which the Faubourg of the Croix de Marbre is completely exposed. The long and magnificent terrace inhabited by the English is swept by this wind whenever it enters the basin of Nice, and reminds the traveller of the quay at Naples, where consumptive invalids occasionally winter, and where a similar wind blows sometimes during the cold season with the violence of a hurricane.

A more favourable locality than the Croix de Marbre might easily be selected in the environs of Nice. At the foot of the heights which shut out the north wind, there are shady valleys, open to the south, the air of which remains calm and temperate, even when the upper strata of the atmosphere are violently agitated. Here we may find a climate different from that of the town, and in many respects equal to the most favoured spots of northern Italy. But still this climate, in my opinion, is in no way adapted for consumptive patients. "There are," says M. Valeri, "certain maladies against which the climate of Nice, far from being

efficacious, as imagined, is mortal ; thus every year's experience tends to prove that it hastens the end of persons attacked by pulmonary consumption. The public promenade inspires feelings of melancholy. I saw many young English ladies there, who were charming, and of a fair complexion, but pale, and on the confines of death."

Dr. E. Meryon has kindly favoured me with the following extract from observations made by his uncle, Dr. Meryon, during his residence at Nice, and which corroborates the preceding remarks :—
" You know how treacherous the climate of Nice is, alluring you out of doors with a brilliant sun, and then attacking you with a cold piercing wind, that neither cloth nor flannel can keep out, making the south side of a house so warm, that you want no fire in it, and leaving the north side so cold, even with a fire, that a well is not colder. Had I leisure, I would collect facts to prove that there are more natives (not strangers, but inhabitants born and bred in the place) who die of consumption in Nice than in any town in England of the same amount of population. I am surprised, as I prosecute my inquiries, to find how little faith in its virtues the Nisands have ; and their bills of mortality give one-seventh of the deaths from phthisis."

It were easy to multiply evidence of a similar kind, to show that the climate of Nice is one of the last to which a foreigner, labouring under tuber-

cular phthisis should resort. But enough has been shown, I think, respecting that climate, to demonstrate that one more favourable for consumptive patients might easily be found within the British Isles.

CHAPTER IV.

THE LOMBARDO-VENETIAN KINGDOM.

Route to Italy by Geneva and the Alps.—The Lake of Geneva.—Bains d'Arve.—Climate of Lago Maggiore.—Climate of Lake Como.

LAKE LEMAN.

THE descent of the Jura into the valley of Geneva, and of the Simplon, through the gorge of Gondo, into the plains of Italy, afford the most striking prospects the invalid will meet with in his journey to the south *viâ* Switzerland.

After a long and tedious day spent in toiling through the mountains of the Jura, the sudden appearance of the lake and the Alps, from the height of Saint Cergues, about three leagues from Geneva, is grand and imposing. It is impossible not to be dazzled by the magnificence, brilliancy, and grandeur of such a spectacle. At times, long lines of clouds overtop the mountains, of which they have the form and almost the colour, seeming like other Alps, suspended, extending and surmounting them. A still more striking scene awaits the pilgrim in search of health, as he emerges from the cold galleries of the Simplon and the wild and

solitary valley of Gondo, on the Italian side of the Alps.*

If the weather is fine, the atmosphere clear, and those mists which so frequently linger over the Alpine valleys are dissipated, or resolved into dew, the first glimpse which the invalid catches of the plains of Lombardy is eminently calculated to exhilarate and entice him on to his *final* resting-place, with renewed hopes of life. The view from the bridge of Crevola, of the open plain, is indeed magnificent. I entirely concur in the truthfulness of the following description by M. Valeri, of this entrance to Italy:—

“It would be difficult to paint the enchanting aspect of the valley of Domo d’Ossola from the bridge of Crevola; and when one emerges from the galleries of the Simplon, those long, damp,

* I embrace this opportunity of directing the reader’s attention to the *Bains d’Arve*, situated about a mile and a half from Geneva. They are admirably suited for nervous or hypochondriacal patients, or for persons whose constitutions have been enfeebled by severe and long-continued mental labour. The stream on which the baths are built is formed of the melted snow of Mont Blanc. The water, as might be inferred from its peculiar source, is intensely cold in the summer months, when everything else in the valley of Geneva is very warm. I have had several patients of the class referred to, who attribute their restoration to health to the cold, pellucid waters, “*splendidior vitro*,” descending from Mont Blanc, and the clear, bracing atmosphere of the adjoining Alps. Dr. Prévost directs invalids as to the proper time and method of using these baths.

obscure caverns, the eye, tired of rocks, forests, glaciers, torrents, and cascades, revels in the contemplation of Nature in all her serenity and gracefulness, after having beheld her in her most rugged garb; one would say that this new land smiles on the foreign invalid, invites him to enter, and decks herself out to receive him; sounds of joy seem to proceed from a distance, and the festoons of the vines around the trees give to the country an appearance of festivity; sometimes the branches of a tree are ingeniously parted above the trunk, and the vine interlacing them forms a real antique vase covered with grapes, as those sculptured ones which embellish gardens and palaces. The meeting of some procession, the songs of the people, the lively and spirited expression of the countenance, the glaring colours of the dresses worn by the women, the size and solidity of the buildings,—in fact, everything combines to inform us that we are in Italy. The magic of the name deepens the impression on the senses. Italy! I repeated involuntarily: this, then, is Italy!"

LAGO MAGGIORE.

In this valley is situate the largest of the lakes of Northern Italy,—Lago Maggiore,—presenting to the eye of the observer a double aspect; for example, on the side of Lombardy it is bounded

LAGO MAGGIORE.

by fertile plains, and verdant hills of little elevation ; the lofty Alps are on the other shore, which is wild, and bristles with rocks covered with convents, chalets, and old fortifications. In this, the upper end of the lake, are the Borromean Isles, the decorations of which, especially of Isola Bella, though they would be extravagant anywhere else, are not displeasing there, but form a contrast to the rugged grandeur of the Alps, which enclose and overlook them.

Along the shores of Lago Maggiore are several small towns, picturesquely situated, and protected on the north by the Alps, which are frequented in the summer months by English invalids, who wish to escape the scorching heat of the southern climate during that period. Of these, the favourite places of resort are, Baveno, immediately opposite the Borromean Isles ; Arona, with its colossus, about midway down the lake ; and Sesto, the frontier town of Lombardy. When the weather is fine, the climate and scenery of the whole of this valley are indeed all that could be desired, by persons in good health ; but, for consumptive invalids, the same objections obtain there as in the valley or basin in which Nice is situated, and described in a former chapter.

The valley of the Lago Maggiore is subject to sudden and fearful thunder-storms in summer, by which the constitution of the atmosphere is rapidly

and extensively affected. The most violent thunder-storm I ever encountered occurred in the autumn of 1847, while traversing this lake in the steam-boat. It was a real thunder-clap, without any warning indication, for, up to a very short time before it burst, the sky was clear, and the air delicious. When the storm had subsided, the temperature fell considerably, the air became damp and chill, and this atmospheric condition lasted for several days.

It will be seen, from the following description of the topography of Lago Maggiore, and the adjacent towns, that the climate of these parts cannot be beneficial for consumptive invalids. The lake, which is about twelve French leagues in length, extends from the town of Bellinzona, at the foot of Mount St. Gothard, in the north-east, to Sesto Calende, in the south-west. The low and frequently interrupted range of hills, along the western banks of the lake, are not of sufficient altitude to protect it from atmospheric influences in that direction. The eastern shore is similarly circumstanced. But the main objection is, the contiguity of the glaciers, the refrigerating influence of which is always liable to affect the temperature of the air, when the wind blows from that quarter.

During the warm season, the atmosphere of this valley is clear, and seems pure, owing, in great measure, to the prevalence of northerly winds. The

natural humidity and coolness of the air are materially modified in the early part of summer and at the commencement of winter, or just at the close of autumn, by the free access of the winds from the south. The easterly winds which prevail in this district have little or no effect in elevating the atmospheric temperature, but rather the reverse; and the winds from the west, which are of frequent occurrence, instead of dissipating the clouds, and rendering the atmosphere transparent, seem only to assist the northerly winds in rendering the air cool and chill.

The climate of Lago Maggiore is cool, and, to a certain extent, mild, during the fine season, especially when compared with that of the Alpine lakes in Switzerland; but this mildness differs essentially from the soothing softness of the climate of the more easterly lakes of this region of Italy. The lake of Como, for example, possesses the same quality of climate during the warm season, with the important additional advantages of a much longer duration of fine weather, and a nearer approach to equability of temperature, besides being subject to a considerably less fall of rain. The variation of temperature, then, and the agitation of the atmosphere, to which all mountainous districts are so liable, are fatal objections to the climate of the Lago Maggiore for consumptive invalids. Patients suffering from chronic catarrh, general debility, and disorder of the digestive organs, will perhaps derive

benefit from the cool and tonic atmosphere ; in fact, all persons in whom a too mild or enervating climate is contra-indicated, especially paralytic cases, may spend several months of the year advantageously in the neighbourhood of this lake, the exhilarating air and grand and beautiful scenery of which are well calculated to cheer the mind and engage the attention of nervous and dyspeptic invalids ; but the dew falls so heavily in the evening, and the mountain mists linger so long in the morning, that the invalid should carefully avoid exposing himself to the influence of either.

CLIMATE OF LAKE COMO.

The summer climate of certain localities along the shores of Lake Como, is, in my opinion, the most favourable for consumptive invalids that can be found in any part of Italy, because the atmospheric changes take place more gradually, and the temperature approaches nearer to equability in these localities than in any of the places usually resorted to by phthisical patients farther south. As I have stated in the Introductory Remarks, it is not heat, but *equability of temperature*, even if it were at a low range, that is needed by the class of invalids referred to ; and wherever an approximation to that quality of climate can be found, there should the consumptive invalid reside.

A patient with an ulcer in his lung, or having a tendency to ulceration in that organ, does not want an atmospheric poultice of heat and moisture to promote suppuration ; but if his physician does, the air of Pisa will supply the desideratum, as we shall see in a subsequent chapter.

The Lake of Como—the “Lari Maxime” of Pliny—is situated to the north-east of Milan, and at a short distance from that city. It is about ten French leagues in length, and extends from the Valteline to the town of Como on one side, and to Lecco on the other, and is separated from the Lago Maggiore by a valley, or rather a chain of intermediate valleys, containing the lakes of Lugano and Varese. The invalid can proceed to Como from Sesto Calende, at the end of the Lago Maggiore, by Varese, and thereby avoid the dull, flat, and monotonous road leading to Milan. This is in every way the more preferable route.

Como is the Arcadia of Italy. Indeed, it was selected by the Pelasgians, in ancient times, as a place of residence, when driven from Arcadia, in Greece, where, according to Strabo, “they found along these beauteous shores the freshness and charming solitudes of their native vales.” It would be difficult to describe the variety of enchanting localities along the lake of Como. Its woods, rocks, and cascades, the mildness of the air, and the olive and citron groves that reach down to its

banks, present a picture, as it were, of Italy and Switzerland combined. And the Grecian origin of the inhabitants is shown by the names of several places in the environs: for example, Lenno, Nesso, Lecco, Colonia, Corenno, which are evidently corruptions of Lemnos, Naxos, Leucadia, Colonna, and Corinth. Como does not present, like most lakes, a great plain of monotonous water; several little straits produce the effect of a succession of lakes, and therefore the scene appears to close, re-open, and renew itself every instant.

The best situations on the lake are Balbianino, Torno, and Bellagio; but, for the consumptive invalid, Varena, near to the branch of Lecco, is the most suitable. It has not the animated and varied aspect of the Como branch, but is favoured with so genial a climate, that besides its pines, laurels, cypresses, olives, the aloe, and even the plants of Syria, will flourish there. Cadenabbia and Tre-mezzine, situate on the shore near the middle of the lake, for climate, position, and their many beautiful villas, are justly described as the *Baiæ* of this little Mediterranean; and the *Pliniana*, the most noted spot along these classic shores, the supposed residence of Pliny, will not yield precedence to either in climate or situation.

The lake is divided, as we have stated, near its centre by a promontory, that forms the point of a triangle, from which diverge, on one side, the

Como branch, extending in a line from the north-east to the south-west, and, on the other, that of Lecco, stretching to the south-east, the southern extremity giving issue to the Adda. Both these sections are not equally protected by the elevation of the land, which is less on one than on the other division. The section embracing Como (the town) and the southern extremity of the valley, has the advantage in this respect. Along the whole extent of this district, lofty mountains present an almost insurmountable barrier to the biting influences of the Alpine winds. The heights along the Lecco division have not the same altitude, but are sufficiently lofty in several places to protect the immediate locality from violent atmospheric influence.

The distribution of these mountainous elevations is so arranged as to give freer access into the valley to the east than to the west wind. The north and south winds are by far the most prevalent throughout the year, and constitute exclusively the anemological characters of the climate. Indeed, so prevalent are those winds in the valley of the lake, that the people who inhabit it seem to know no other, and have bestowed upon them the respective names of the *Tivano* and the *Breva*—the latter being the diurnal wind, which usually commences to blow about midday; and the former the nocturnal wind, which ceases as the morning advances. M. Carrière well describes the effect of the pre-

dominance of the north and south winds upon the condition of the climate.

"The following," he says, "is the result of the alternate play of these two winds in the valley of Como. Under the influence of the north wind, the nights are serene, and a certain amount of thermal radiation takes place between the surface of the lake and the heavens, which sensibly diminishes the temperature of the superficial strata of the water. In the morning, if the east wind rises, the hygrometric condition which it brings with it in its transit across the Adriatic, produces more or less fog, which will be dispersed or resolved into rain, if the north wind resumes its sway; if not, it will remain until the south wind causes it to evaporate by raising the temperature of the atmosphere. In consequence, therefore, of these two causes—the intervention of the north wind in the morning, and the prevalence of the south wind throughout the day, from noon—a serene sky and a peculiar mildness in the temperature of the atmosphere, are more likely to prevail, than a continuation of the fog or sudden changes from extreme heat to cold.

It would appear from this description that a climate almost *equable* should be the result, which might seem incompatible with the ranges of temperature observed in some of the most temperate stations on the lake; but the preceding remarks refer to the summer season, which, if the facts

and inferences above stated be exact, should certainly present a very moderate mean temperature. With regard to the winter, if it is cold towards the northern extremity of the lake, in consequence of the contiguity of that section to the upper valleys, and its exposure to the west, the climate presents, on the other hand, a more elevated and general mean temperature along the southern extremity, which is more sheltered and protected by the surrounding heights.

In this favoured region are to be found spots presenting all the advantages of the warmest latitudes of the Italian Peninsula, without any of that oppressive heat so characteristic of the more southern districts. The vegetation shows the character of the climate, and is represented by the orange, the olive, the cactus, and those plants of the *campagna* of Greece which grow in the narrow sunlit vales of Calabria, and along the shores of the Ionian sea. In viewing all those villas and terraces of marble, filled with some of the choicest objects of art, which follow one another in close succession from Como to Tremezine, and are repeated along the Lecco branch, we can scarcely believe that we are in Lombardy. The air, softened by a gentle moisture which mellows the temperature, and perfumed by the luxuriant flowerbeds which encumber every garden, appears to belong to southern Italy, and the impressions that one

receives everywhere around seem to justify the illusion. Souvenirs of Rome will ever abide along the shores of the ancient lake Laris, where Pliny, retiring from the bustle of the Imperial capital, and forsaking his splendid mansions at Baïæ and Ostia, usually passed the summer season.

But this Italian "Garden of the Hesperides" is not exempt from human misery. There is a disease, I might almost say indigenous to the soil of those charming localities and the surrounding country, worse than death. It does not always prove fatal, but spares its victim to torture him, oftentimes through a long life, with the combined miseries of raving madness and drivelling fatuity. This is not a rare disease in Lombardy. The lunatic asylums are crowded with disgusting specimens of its ravages, in the proportion of a third to a fourth of the gross number of patients. The hospitals contain cases of this malady in the early stages, before the mind becomes a wreck; and during the intermissions—for the disease intermits for several months each year during the first three or four years of its existence—the doomed victims may be seen wandering about the streets of Milan or cultivating the soil in the Milanése, as I have often witnessed. The causes of this melancholy disorder are still unknown. It has baffled the united efforts of every government, and of the Lombardo-Venetian physicians, for the last half-century, to discover the

origin of this malady, which has been indifferently attributed at various times to the soil, the climate, and the food of the people. The disease of the skin, which accompanies the disorder, is merely a symptom or expression of the internal mischief—a species of leprosy; nevertheless, the original complaint takes its name from this symptom, and the whole is called Pellagra (from *pellis ægra*), diseased skin.

To return, however, to the climate of Como and pulmonary consumption: I have only to say, in conclusion, for the benefit of the consumptive invalid who *will* blindly go to Italy for “the cure of his complaint,” that there is no other part of that country, in my opinion, so well adapted for his summer residence as the lake of Como. Owing to the hygrometric condition of the atmosphere, and the moderation of the temperature, caused by the waters of the lake and the vicinity of the mountains, the climate preserves during the summer months the mild influence alleged to exist in the usual winter stations. The advantage of this is obvious; for the main points required to constitute a really beneficial climate for the disease under consideration are, as M. Carrière remarks, total absence of violent atmospheric agitation, and the continuation of the same climate through the transitions inseparable from the succession of the seasons.

CHAPTER V.

Climate of Milan.—Pellagra, or Italian leprosy.

CLIMATE OF MILAN.

THE climate of Milan has some claims upon our attention, in consequence of the geographical position of the locality.

Although the city of Milan is not recommended as a permanent resort for consumptive invalids, it is nevertheless frequented by a great many of this class of patients, on their way to the south of Italy, or when returning; and its proximity to the lakes of Como and Maggiore, together with the attractions of the place itself, such as its superb opera-house (La Scala), its splendid architectural monuments, including the Duomo, ornamented by three thousand statues of white marble, besides the celebrated paintings of Guercino, Guido, and the Caracci, in the museum of Brera,—these induce many a way-worn invalid, when flying from the scorching summer heat of the south, to rest a little there, and so avail himself of the shade of the narrow streets of the ancient city of the Visconti.

Here, for the first time since entering Italy, I witnessed those “spectacles of human misery” described in the introductory chapter, with whom I

subsequently became painfully familiar in the different towns farther south. In the cool of the evening, or during the day, when the sun's rays were obscured by a hazy state of the atmosphere—a common occurrence in Lombardy—Englishmen are sure to meet some of their compatriots in the advanced stages of phthisis, with "*pallida mors*" visibly stamped upon their countenance, crawling along the streets, or dragged in invalid chairs—to see sights perhaps the last they will ever witness. Indeed, I have noticed some of the more adventurous, regardless of the heat of the sun, or of the effect produced by sudden transitions of temperature, proceed to the Duomo at noon, when the meridian is taken, that being a favourite rendezvous and pastime for strangers. The central position, then, of Milan, in the highway to or from the south of Italy, by the Simplon, and the fact of its being a temporary resting-place for consumptive invalids, visiting Italy, or returning to this country, indicate the necessity of pointing out the leading peculiarities of its climate and topography.

Milan is situated at the head of the valley which contains the lakes Como, Maggiore, Lugano, Garda, &c., and is about sixty leagues from the Adriatic. The country round is perfectly flat, and there is scarcely an elevation on any of the different roads leading to Milan over this great plain to interrupt the uniform monotony of the routes. To-

wards the lakes, the slopes are covered with vineyards, olive plantations, &c., which give the landscape of those parts an animated appearance. In the directions of the north and east, the country presents the usual character of the Lombard plains. Canals skirt all the great roads, secondary canals interlace with each other, and form a network, which embraces every part of Lombardy; and the soil, yielding everywhere the same kind of production, is divided only by narrow plantations of luxuriant foliage, with the tall Italian poplars stretching here and there far above them.

It is apparent, from the foregoing description, that Milan is but indifferently sheltered from the various winds, no matter from what point of the compass they blow. The south wind has to cross the Apennines before it reaches Milan; but the mountain range, the same which covers Genoa and Lucca, is so distant, and of such little elevation, that it offers no impediment to the approach of this wind. The west and south-west are partly arrested and modified in their character by the line of the Alps, which corresponds to their course, and the upper valleys of this range admit freely the north and north-east winds into the plain in which Milan is situated. On the side of the Adriatic, from the north to the south-east, the coast is altogether exposed, which enables all the various winds to sweep over the plain without interruption, but not

without producing marked changes in the temperature of the warm winds. These thermal changes are thus explained by M. Carrière:—The sea, and the open country corresponding with it in the southern region of the Peninsula, admit of the free passage of the temperate and humid winds, which, during their transit, sink in point of temperature, but gain in that of humidity.

The west winds, influenced by the icy barrier which crosses their path, cool the air in place of softening it, and condense the vapour which was dissolved by the antagonistic winds. They produce in this locality an effect almost the reverse of that which characterizes them in the southern regions, for they cause a fall of rain without rendering the atmosphere mild. The north winds, colder, more rapid, and more frequent, amongst which may be included the north-east, are those which re-establish the fine weather, and maintain its duration by dissipating the clouds and fogs. The south winds which pass over the transverse chain of the Apennines assist as auxiliaries to the winds blowing from the Adriatic; but they do not possess the same temperature, or the same hygrometric conditions, which characterize them along the coast of the Mediterranean.

The climate of Milan, as is evident from the preceding remarks, is decidedly cold. Although the city is not shut out from the influence of the warm

winds, the influence of those of the opposite character greatly preponderates, and thus keeps down the temperature. For example: the mean winter temperature is 1.99, whilst that of Venice is 3.35.* Snow and rain fall during the winter with a frequency totally unknown in the southern parts of Italy. The mean number of days on which snow fell during a period of sixty-eight years, was nearly eighteen; the maximum had even reached to twenty-one days, in a shorter period; namely, from 1820 to 1830. This observation with regard to the influence and frequency of the cold winds is further developed by a comparison of the fine and rainy days. The rain falls much more abundantly at Milan than at Venice, and still the mean of the rainy days is but 62, and the maximum never higher than 81 during a period also of sixty-eight years.† Although the greatest quantity of rain falls in autumn, this does not much affect the other seasons, so as to diminish the amount during spring, summer, &c., for there is no very decided difference in its distribution throughout the year.

It appears, then, from the foregoing remarks, that the climate of Milan is determined by the concurrence of cold and dry influences, combined

* Table des Minima, *Physique Terrestre*, par M. Becquerel.

† Angelo Cesaris. *Del Clima della Lombardia: Atti della Società Italiana*, vol. xviii.

with a degree of humidity which the temperature cannot modify or disperse, as it does in other districts of Italy. It is this humidity of climate that gives the population of the town and adjoining parts the strikingly lymphatic appearance which they possess. The northern influences are, moreover, severely felt ; they follow different conditions of the atmosphere with sufficient rapidity to disturb the system profoundly. It is only necessary to walk through the streets of Milan to see the morbid effects upon the countenances of the people, produced by the hygrometric condition of the atmosphere, and the sudden transitions from humidity to the opposite state of dryness and cold. It is hence very evident that consumptive invalids will derive no benefit from the climate of Milan, but they may sustain a considerable amount of mischief, and therefore should spend as few hours as possible within the walls of the capital of Lombardy. The immortal inscription of Dante, referring to a gloomier place, might be appropriately fixed over the gate of Milan for the benefit of the deluded consumptive patients of other countries who may pass through that city on their way to the south :—

“Lasciate ogni speranza voi che 'ntrate.”

It was here, in the Ospedale Maggiore, one of the finest and largest hospitals, perhaps, in Europe, that I first became acquainted with the miserable

disease, both of mind and body, incidentally mentioned in the last chapter. As the causes of this extraordinary complaint have been attributed to peculiarities of the climate, of the soil and its productions, of the Milanese, I shall describe its history, so far as I could ascertain it correctly from printed records, and from personal observation.

PELLAGRA, OR ITALIAN LEPROSY.

It is a singular fact, that one of the most miserable diseases which afflict humanity has been until very recently confined to a portion of the fairest country on the earth.

Pellagra (from *pellis ægra*, unhealthy skin) is a symptomatic disease of the skin, in which the external eruption is but a very mild expression of a most remarkably vitiated state of the constitution, the origin of which is not yet clearly known. Owing to the frequency of its occurrence in the Lombardo-Venetian kingdom, and its usual termination in death of a lingering kind, mania, or helpless imbecility, the origin of this disease has long been the subject of anxious solicitude to the governments of Lombardy. In 1831 the official returns showed that in the Milanese alone twenty thousand individuals were attacked by pellagra. The lunatic asylums of the Lombardo-Venetian kingdom contain victims of this disease in the pro-

portion of a third to a fourth out of the gross number of patients; and in 1843 the official returns showed that the proportion had increased in the hospitals for the insane at Brescia, to the alarming extent of three quarters out of the gross number of patients. Within the last few years, several cases of pellagra, which had been hitherto considered as a disease peculiar to Northern Italy, were observed in France in the department of the Gironde, and in Gascony, and attracted the notice of the French government. A memoir on the subject was read at the same time before the Academy, by M. Roussel. I have had an opportunity of observing this disease in the hospitals and lunatic asylums of Lombardy, and more melancholy examples of afflicted humanity I have never witnessed before. The Cretins of the Valais are fortunate in their affliction compared with the *pellagrosi*.

Symptoms.—Pellagra shows itself in the most insidious manner. The system is saturated with the disease before the slightest external manifestation appears. It commonly announces itself in the following way. About the beginning of April, when the warm weather commences, a shining red spot suddenly arises on the back of the hand or some part of the body, resembling erysipelas, but without much itching or pain, or, indeed, any other particular inconvenience. Men and women are

subject to it, but the latter more frequently than the former. This red spot elevates the skin slightly, producing numerous small tubercles of different colours; the skin becomes dry, and cracks, and the epidermis sometimes assumes a fibrous appearance. At length it falls off in white furfuraceous laminae, but the shining redness underneath still continues, and in some instances remains through the following winter. In the mean time, excepting this mere local affection, the health is not in the least impaired, the patient performs all his duties as usual, enjoys a good appetite, and digests well. And what is most remarkable is, that towards the end of September, when the heat of summer is over, the eruption generally disappears altogether, and the skin resumes its natural healthy appearance. The disease, however, is not eradicated,—it is merely suspended until the following spring, to reappear with the same characters, or with greater intensity.

This, the first stage of pellagra, in which the local affection is only manifest, continues in some instances for eight or ten years, disappearing regularly every winter, and returning in the spring. It most frequently, however, reaches its greatest height after the second or third attack. When it is about to advance rapidly, this malady will reappear the following spring with greater constitutional disturbance, but still apparently confined to the hands

and other exposed parts of the body. The colour of the skin soon becomes more like that of tanned leather than anything else. General debility ensues as the summer advances: the nervous system is now deeply involved, producing anxiety, despondency, cramp, and spasm. The convulsions with which the *pellagrosi* are attacked are most shocking to see, and are of almost every kind, catalepsy excepted, which has been described by writers. When the paroxysm is over, the patient becomes a prey to the most distressing kind of melancholy, of a religious and suicidal tendency. Towards the end of autumn of this the second year, the disease begins again to subside, but the remission is less complete than on the previous occasion. The disease reappears the third year at a much earlier period, and with an aggravation of all the symptoms. The constitutional disorder is now predominant. The skin all over the body is dry, tough, and shrivelled, like that of a mummy, and the debility is so extreme that the patient can scarcely support himself. Diarrhœa ensues, which is soon replaced by dysentery. The breath and perspiration are foul and offensive. The saliva is discharged in great quantity at the angles of the mouth.* Dropsy, spasmodic diseases, as epilepsy,

* The saliva and sweat are so impregnated with saline matter, that in some districts the disease derives its name from that circumstance, and is called "salsedina."

supervene, and if the unhappy patient survives these it is for the more wretched alternative of lingering on in a state of helpless imbecility, or of mania, which invariably terminates in fatuity. Unfortunately the disease does not always come to a close in the third or even in the fourth year. It may be continued for five, ten, or even fifteen years, during which period the patient knows that his doom is sealed.

The *internal* symptoms of pellagra are sometimes extremely numerous, and equally intense. The patient is overwhelmed with melancholy. Pains in the head of a dull or lancinating character, ringing in the ears, vertigo, amblyopia, convulsions of the eyes, delirium, spasm of the muscles of the face, rigidity of those of the neck and trunk, and a creeping sensation along the spinal column, are often present together. Respiration becomes difficult, pains occur in the chest, liver, and bowels, and the patient, however chaste, is attacked by violent sexual desires. He is seized with spasm, cramp, and violent trembling. He attempts to run at imaginary objects, but quickly falls down in a state of unconsciousness and complete prostration. An abundant secretion of viscid and acrid saliva dribbles from his gaping mouth, and announces the stage of idiotcy. Symptoms of gastric irritation are strongly manifested during the progress of the disease, by bilious vomiting, thick and furred

tongue, anorexia, alternating with a morbid craving for food. The intestines and the abdominal organs are subsequently attacked, inducing a low kind of fever, which in its turn is succeeded by colliquative diarrhoea, dropsy, and chronic inflammation of the viscera. It is singular that the patients sometimes preserve their plumpness to the last; the pulse being low and feeble, and the gums red, swollen, and bleeding, as in scurvy.

I have seen two bodies of the victims of this distressing disease opened at the hospitals of Milan. The membranes of the brain and of the upper portion of the spinal marrow were highly inflamed, which readily accounts for the delirium and aphelxia manifested during the progress of the malady. The whole of the chylopoietic viscera were more or less inflamed; and in some parts the mucous surface was completely disorganized. No traces of organic disease were observed in the lungs or heart. Indeed, the chest seemed to be exempt from the ravages of pellagra.

Causes.—The causes, the real source of this Lombardo-Venetian plague, have hitherto baffled the united efforts of successive governments, and the most enlightened medical men of Austrian Italy. Two of the most recent Italian writers on the subject ascribe it, one to a degeneration of syphilis, the other to maize, which forms the chief food of the peasantry of Lombardy. The

former opinion is too absurd to merit any serious consideration. The latter being more plausible, though, in my opinion, equally erroneous, deserves further inquiry. Signor Balardini, of Brescia, who is the most recent advocate of the latter view, classes pellagra with endemic diseases of the skin of other countries; as, for example, the *radesyge* of Norway, Aleppo evil, *plica polonica*, *mal de Cayenne*, &c., and puts forth the following propositions respecting the origin and diffusion of that malady:—

1st. It is a disease of modern origin, appearing for the first time shortly after the general introduction of maize as an article of food into Italy.

2nd. The disease is almost confined to that portion of Italy where maize forms the almost exclusive food of the peasants.

3rd. It does not attack the rich, or those in easy circumstances, who use nutritious food; and even those persons attacked by the disease, provided the attack be recent, will soon be restored to their original health on suspending the use of maize, and replacing it by animal food.

4th. The plant itself is subject to disease from the humidity and extensive variations of temperature to which the climate of Lombardy is subject. This disease consists in a peculiar parasitic fungus (*verderame*), which turns the grain sour, and extensively modifies both its physical and chemical qualities.

Before the year 1771, pellagra had not been described, nor even alluded to, by any of the Italian writers. Frappoli then directed attention to it. It first showed itself in Lombardy proper, whence it spread gradually, as the cultivation and use of maize became more general, to the Venetian and sub-Alpine territories, to the valleys of the Italian Tyrol, and finally across the Apennines into Tuscany. At the present time, nine-tenths of the food of the peasants of the Milanese consist of maize, in the form of coarse bread, half baked, or of *polenta*, ragoût, &c. In Brescia and Bergamo especially, where the extensive use of this kind of food is proverbial, the number of the *pellagrosi* is great in proportion to the population; and the comparative rarity of the disease in the mountainous districts of Bellona, Douga, &c., is apparently the result of the inhabitants of those localities migrating for eight or nine months every year to seek employment. It is certainly singular that in those districts where rice is abundant, and the food of a mixed character, the disease is seldom seen; whereas in those localities where the inhabitants are most oppressed, maize the ordinary food, and poverty and privation the rule, so far as regards the peasants, rather than the exception, pellagra is never absent, and presents itself under circumstances and with characters which sufficiently justify its popular title of *malattia di miseria*.

Signor Balardini remarks, that the disease seems to prevail with greater intensity between the degrees of latitude 43° and 46° , embracing principally Upper Italy, the south of France, and the north of Spain, rather than any other parts of Europe; those regions being bounded by high chains of mountains, which render the climate humid and the ventilation difficult, and consequently the maize, whose natural climate is dry and warm, rarely ever arrives at maturity. But Naples, Sardinia, and Sicily, in which countries the same plant is freely cultivated and used as human food, are stumbling-blocks in the way of this theory, because pellagra does not prevail in any of them; nay, more than this, in the Lombardo-Venetian district of Sondria, the Valtalina, pellagra is very rare indeed (two cases only having occurred in 1840); yet the poverty of the peasants, their hard and incessant labour, and bad nourishment, are notorious. In some parts of Switzerland maize is extensively used, yet this disease is unknown, unless cretinism or the *goitre* are supposed to represent it.* But if privation and miserable food were the causes of this most remarkable disease, surely we ought to find something akin to it along the western shores of

* In that most melancholy of towns, Sion-in-the-Plain, the capital of the Valais, maize and goitre are abundant enough, but I never heard of or saw anything approaching to pellagra there.

Ireland, where the peasantry drag on a miserable existence (it cannot be called living) on one kind of vegetable food all the year round, and that of the worst description. Dampness, nay, more than humidity—for it may be truly said that “it never rains but it pours” in that quarter—are not wanting in the mountains and valleys of Connemara no more than on the Alps and the Tyrol; and, from personal experience, I can testify that “the big rain comes tumbling to the earth” with equal weight and velocity in the former as in the latter. Signor Balardini, however, cites, in favour of his own views, the results of the experiments of Cerri.

This physician took ten patients suffering from pellagra in an advanced stage, and fed them on nutritious food, chiefly animal, instead of the maize, bread, and polenta which they had hitherto lived upon. In a short space of time their health became materially improved, and the following spring, the advent of which is always dreaded by the *pellagrosi*, passed over without the disease re-appearing in any of those patients. Balardini himself has performed similar experiments, which he states were followed by like results. When the constitution was not saturated with the disease, it soon disappeared altogether, and even in extreme cases the patient's health was considerably altered for the better. He admits, however, and quite accidentally, that this latter desirable alteration

was greatly assisted by *change of locality*. Here I suspect the truth oozes out; and the following case, related by Nardi, goes to support the view of the *topographical* origin of pellagra, although it is advanced for an opposite purpose:—A peasant of Lombardy was attacked by this disease in a severe form. He entered the service of a family in easy circumstances, at some distance from his native place, and was not long in regaining his former state of health. Thinking himself cured, a few years after this he returned to his home, and to his original mode of living, when the disease returned as speedily as it had disappeared before.

He re-entered service, was again cured, and, on re-turning home, lost his health as before. The patient now made up his mind to abandon his native place, and go back to service for the remainder of his life. After this he was never again troubled with his complaint. Signor Balardini seems to have overlooked the part which the change of locality has had in promoting the cure; but it would not suit his theory, which, to do him justice, he expounded at the recent Congress at Genoa with all the impressive earnestness of a true believer, notwithstanding the impatient incredulity with which it was received by many of his fellow-labourers in the same field.

The pernicious effects of maize, it seems, are not confined to the human species; for dogs and horses cannot indulge too freely in this kind of food with

impunity. During the occupation of Italy by the French, in 1812 and 1813, their horses are said to have refused to eat it after one or two trials. It was therefore sold by the soldiers to the peasantry, who eagerly bought and consumed this rejected cattle food : hence the cause, according to Balardini, of the great prevalence of pellagra during those years in the Lombardo-Venetian states. Dogs which were fed exclusively on maize, about the same period, were attacked on the back by a species of "erythema mordicans."

Maize has been found, by analysis, to be totally devoid of gluten, which constitutes the most animalizable part of the other cereales. The peculiar degeneration of this grain, called *verderame*, and which appears to belong to the genus *sporisorium*, consists in the development of a greenish product in the germ of the plant, which gradually extends to the pulp. This abnormal substance has been subjected to microscopical and chemical examination by Signor Balardini, who ascertained it to be a parasitic fungus, containing, besides the usual elements of maize, stearine, resin, fungic acid, and an azotized substance. This production not only modifies the physico-chemical properties of the grain, but completely alters its taste or flavour, which is rendered sour and bitter, causing heat in the fauces and along the œsophagus, and nausea. More than a seventh part of the plant grown in Lombardy is stated to be vitiated by this parasitic

growth, especially when the seasons have been cold and rainy, or the plant grown in low and damp localities. It has been also remarked that, under similar circumstances, and in similar situations, pellagra prevails most; that, in fact, this disease is occasioned in the same manner as other diseases resulting from vegetable poison,—as, for example, ergotism,—and that the appearance of the eruption on the skin is a certain indication that the system is saturated with the poison.

There remains but little to be said regarding the treatment of pellagra. When the disease is not of long standing, and the patient naturally of good constitution, it is simply necessary to remove him to another locality, and feed him on nutritious animal food, to ensure the removal of the disease; but when the latter is of long standing, and has fairly taken root in the system, no kind of treatment yet devised will be of much avail; indeed, under any circumstances, physic seems to be utterly useless in this miserable disease. Its etiology justifies this opinion. The causes of pellagra are evidently local; and, however the excessive use of maize may assist in producing the complaint, it is not the only cause; for the climate of the locality, the productions and peculiarities of the soil, and the general mode of living, exercise no inconsiderable part in the development of the peculiar endemic of the Lombardo-Venetian states.

CHAPTER VI.

Climate of Central Lombardy.—Climates of Pavia, Mantua, Verona,—Lake of Garda.

CLIMATE OF CENTRAL LOMBARDY.

THE valley of the Po, particularly between Milan and Venice, is a dull, flat plain, irrigated and intersected by lakes, numerous rivers, and countless tributary watercourses, which impart to the climate and topography of those territories many of the characteristics of Holland. The soil is very fertile, yielding four hay-harvests in the year. The roads are skirted by rows of mulberry-trees, (the common tree of the soil,) and the vines are trained to hang from tree to tree in rich festoons, precisely as described by Virgil. But a rich soil and luxuriant vegetation are not necessarily associated with a healthy climate and salubrious locality; on the contrary, in Lombardy, they are for the most part antagonistic.

This region is exposed to the influence of every atmospheric agitation, in spite of the lofty mountains by which it is almost surrounded. Its geological construction, the hygrometry of the lower valleys, the composition of the soil on either side of the Po to the sea-coast, and the peculiar mode

of cultivation adopted for fertilizing the land, very materially affect the character of the climate. The flat, extensive plain traversed by the Ticino, the Adige, the Adda, the Oglio, and the Po, lies upon a chalky substratum, as far as the extremity of the marshes of the pontifical states; and this again is covered by a thick detritus, carried down from the Alps by the water-courses which the perpetual snow and the glaciers contribute to the rivers that flow through Lombardy, into the Adriatic. Where these *débris* accumulate, as a matter of course the soil is elevated; and this is particularly evident in the vicinity of the rivers, the beds of which are so filled with the detritus as to cause the water to overflow the banks. The *embouchures* of the great rivers, as, for example, the Po, give some idea of the importance of this result.

Deltas of considerable extent force the waters to overrun a vast extent of territory, accumulating here and there in large quantities, and forming along the banks of the rivers marshy swamps—in other words, endowing all this region with the chief elements of insalubrity. The miasmatic exhalation is not confined to the neighbourhood of the great water-courses, to the exclusion of the other districts. “The entire plain of Lombardy,” says M. Carrière, “is irrigated so profusely, that, with the exception of Holland, it has not, in this respect, an analogue in Europe. A great number of rivers and lakes, of all

sizes; a network of canals, formed out of these reservoirs and watercourses; and finally, the artificial marshes produced by the irrigation necessary for the cultivation of rice, occupy, in great measure, the whole territory. It can scarcely be wondered at, then, that this land should almost always present the appearance of having been subjected to a recent inundation. When the waters retreat, the mud and saturated soil are fertile sources of noxious exhalations; and there are, besides, scattered through the interior of the country, *foci* of miasmatic effluvia, which would be in a still higher degree more dangerous and more numerous, were it not for the enlightened industry bestowed upon the cultivation of the soil.

The atmosphere of Lombardy possesses peculiar characters, arising out of the topographical and hygrometric influences previously described. The lofty mountains which interrupt the progress of the different winds blowing from behind them, exercise other influences, which materially affect the quality of the climate. In consequence of their great altitude, perpetual snow and ice cover their summit and sides, which enable them to condense the watery vapour suspended in the atmosphere; and it must not be forgotten, that the hills rise on the skirts of a great plain, through which water flows in every direction. It is this influence upon an atmosphere saturated with moisture that imparts

to the Lombard climate a character quite different from that of every other region in Italy. The clouds accumulate in dense, large masses, different from the light, fleecy appearance they present about Rome and Naples ; whilst in some of the valleys close to the chain of mountains, thick fogs resist the solar influence for a considerable time in the morning, even at the commencement of the warm season.

Rain falls in vast quantity throughout Lombardy. M. Carrière states, that there is a difference of 217 millimetres between the annual mean of this territory and that south of the Apennines ; and Schouw says, that even between Milan and Venice there is considerable difference, the annual mean of the former being 966 millimetres, and the latter 933,—thus showing, however incredible it may appear, that a less quantity of rain falls in the midst of the lagunes of Venice than in the central part of the Lombard plain. The same author further observes, with reference to the periods at which rain falls in northern and in southern Italy, that it usually occurs along the Apennines, from Tuscany to the coast of the Ionian sea, during the autumn and the beginning of winter ; but when these seasons are passed, rain does not often fall. In continental or northern Italy, it generally rains less during autumn and winter than in spring and summer ; indeed, in many districts, the mean fall in

summer and in spring exceeds that of winter and of autumn.

The character of the rain is also different. It commonly falls, in Lombardy, in the form of a fine, continuous drizzle, like a "Scotch mist," which may last for several successive days; whereas, in the south, it comes down in sudden and violent torrents. I have had disagreeable experience of those drizzling mists in many parts of Lombardy. Along the lake of Garda, particularly, the weather seems to be divided between stormy winds and continuous mists, and I have still a vivid recollection of the cold, clammy, creeping sensation of skin which I experienced in the vicinity of this boisterous lake, notwithstanding the pleasing descriptions of Catullus, who selected the locality for his residence. The climate and scenery along this troubled water—"fluctibus et fremitu assurgens"—very closely resemble those of a Highland loch. There are now and then snatches of clear sky and fine weather; but stormy winds and misty rains are of too frequent occurrence, either for comfort or for health.

The prevailing winds of Lombardy have a frigid tendency. It has been already mentioned that this plain is bounded on the north by a chain of mountains—the central Alps—and parts of the same range, which dip as they approach the Adriatic, but they are not of sufficient altitude, especially towards the eastern extremity, to protect the open

plain. The south wind is partially arrested by the transverse chain of the Apennines; and the west wind, the influence of which elsewhere is to modify the extremes of heat and cold, and, as it were, to transform an intense into a moderate climate, meets with an almost insurmountable barrier in the lofty summits of the Swiss and Piedmontese Alps. When the west wind does overcome this obstacle, it has lost so much of its natural character that it cannot produce similar modifications in the climate which the same wind does along the shores of the Mediterranean.

The meteoric influences of Lombardy are then decidedly cold and variable, and the action of the winds is clearly given by M. Carrière in the following summary:—The west has little or no influence in this district; the south does not preponderate; the north circulates pretty freely, but the north-east still more so, for it enters the plain by the extremity of the Carpathians and of the Julian Alps, which are the lowest of the entire range of mountains that bound the Lombard plains on the north. The refrigerating influences would be still further developed if the east, the south-east, and even the south-south-east, did not blow from the Adriatic and the eastern shores of lower Italy. This anemological distribution, while it maintains a moderate or low temperature, according to the seasons, favours the formation of fogs, the accumu-

lation of clouds, a humid state of the atmosphere, and the frequent fall of rain. The extremes of temperature increase in proportion as we approach the valleys at the foot of the central Alps, especially those most distant from the Adriatic coast.

The relative frequency of the north-east wind, and the freedom of its action over the plains of Lombardy, materially affect the temperature. The entire coast of the Adriatic, from Venice or Trieste to Otranto and the promontory of Leucadia, is subjected to two kinds of influences, perfectly opposite in their nature and effects. Along the southern portion of this line the warm winds prevail, especially the south-east, which oppresses the invalid, and interrupts the transpiration. The northern extremity is under the dominion of the north-east. Venice, for example, enjoys a moderate temperature, rendered benign by the influence of the winds of the Adriatic, but it is also more or less subject to the effects of the winds above mentioned, that escape by the eastern extremity of the Julian Alps, and sweep over the lagunes. If, however, the temperature of this singular city is lowered by the northern breeze, the climate gains, in another respect, by the clearness and transparency which the same wind imparts to the atmosphere whenever it blows.*

* Dottore Giacinto, *Delle Condizioni di Venezia, in ciò che riguarda la Vita e la Salute dell' Uomo.*

It is evident, from the preceding observations, that the climate of Lombardy, especially of its central portions, cannot afford more benefit to the consumptive invalid than that of the fens of Lincolnshire, or of the marshes of Holland. The reader has now placed before him the exact conditions and agencies involved in the constitution of that climate. The results of M. Carrière's researches corroborate in every respect my own views on the subject. The topographical, hygrometric, and anemological influences brought to bear upon the constitution of the climate of the plains of Lombardy show clearly enough, in my opinion, that a locality equally injurious for persons suffering from pulmonary consumption could not be found in any part of the United Kingdom, or of central Europe.

The climate of the principal towns of Lombardy, such as Brescia, Pavia, Verona, Mantua, possesses the same obnoxious characters as those of the general climate of the country. Pavia, for example, which is situated in a low and damp neighbourhood near the confluence of the Ticino with the Po, is subject to frequent fogs. Dr. Webster, who was attracted to the university of that ancient city by the fame of Scarpa, Volta, and their eminent colleagues and successors, thus writes, in reply to my inquiry:—"For many weeks during winter the fogs are so dense that the sun is scarcely visible.

During the whole of my residence in Pavia—from November to April—I seldom saw a clear day; indeed, for months real sunshine was unknown. This place I consider, in many respects, a very unhealthy residence; agues, fevers, inflammations, and other severe diseases being common complaints, whilst enlargements of the spleen and liver are very frequent in hospital patients. In short, a person might as well reside in Holland as at Pavia, with this difference, that in the former country, where I have also travelled, he does not expect an agreeable climate; whilst, throughout ‘*La Bella Italia*,’ strangers usually anticipate, although often erroneously, an Elysium, but which they will certainly not find in this district, nor in many others, however agreeable to the animal feelings and senses.”

Mantua is not better circumstanced as regards climate. Although the “full-spreading beech” and the groves of “thick hazels” are replaced by the batteries and fortifications, with their moats, dry and wet ditches, &c., of *la brutta gente*, as the Lombards contemptuously call their Austrian rulers; “marshes with slimy rushes” still remain to impregnate the air with noxious exhalations, and so favour the development of disease. Nor is Verona an exception to the general rule. Mr. B. Honan, an accurate observer, and a gentleman of authority, who has had many years’ experience of the climate

from residing in different parts of Italy, both north and south, writes from Verona, in the month of January, 1850, in the following unmistakable *ipsissima verba*, which are true, generally speaking, although somewhat vernacularly expressed: "There are many humbugs in Italy, but there is none against which I more complain than its climate. I never spent so severe a winter as this, and I seek in vain any one corner where I can find shelter from the dry and piercing cold. In all northern climes the houses are prepared for the severity of the weather, and with good stoves, thick carpets, well-closing doors and windows, and our bright sea-coal fire, we defy the winter; but in Italy the cold is more intense within the house than without, as not a single window or door is air-proof, and a bright fire only increases the number and bitterness of the various currents which it inhales through every chink. At the moment whilst I write I am assailed in front, in flank, and rear, and my palsied fingers can with difficulty hold the pen, though Nature has not made me one of the shivering race; but I cannot tolerate humbug in any shape, and above all, the humbug of an Italian climate!" Writing from Rome in the middle of the following May, the same author observes:—"The weather is still cold and disagreeable, and the humbug of an Italian climate applies as much to the spring at Rome as to the winter at Verona."

CHAPTER VII.

The Venetian Kingdom.

CLIMATE OF VENICE.

VENICE has been called by enthusiastic writers, the Queen of the Adriatic, although built on piles in the midst of a lagune, and lauded as one of the wonders of art, if not the greatest triumph of man. However true this fanciful assertion may be in reference to her early history, she is now merely the corpse of a city, fast crumbling to decay, whose gorgeous relics of former greatness only add to the desolation and mournful aspect of everything around.

Although Venice, I believe, is rarely recommended as a resort for consumptive invalids, yet patients of this class may be always found in her public buildings and promenades. Indeed, there seems to be a mysterious attraction between hectic patients, wandering after an *ignis fatuus*, and various desolate and woe-begone cities in the south of Europe. Take, for example, Pisa, Rome, and even this place. But Venice has other, and more substantial, claims for the consideration of those consumptive patients who go to Italy in search

of health, than her melancholy aspect, solitude, and decay.

The climate of this singular city possesses a certain mildness of character and equability, often unknown in some of the more southern parts of Italy, usually frequented by consumptive invalids. The mildness of its air is caused in a great measure by the moisture arising from the lagune, &c., modifying the temperature : farther, the equability of the climate is owing to a kind of balance existing between the warm and cold atmospheric influences, which again results from the distribution of prevailing winds. These different agencies I shall explain more fully as we proceed.

Independently of the ordinary atmospheric constituents, the air of Venice is impregnated with emanations of bromine and iodine, according to the chemical researches of Cenedella and of Pisanello, (1847,) who state that these elementary bodies are found in abundance in the plants growing in the lagunes, and to a certain extent even in the water itself. The native physicians place great faith in the resolute properties of the climate, in scrofula and in incipient phthisis, owing to the presence of these emanations. So far as the latter disease is concerned, such alleged sanative effects are purely imaginary, as shown by the prevalence of consumption amongst the inhabitants.

It is not, however, the chemical constituents of

the atmosphere, nor the supposed salubrious influence of the climate that attracts English consumptive invalids to Venice. It is the magic of its name. Various historical associations connected with the place, the splendid ruins, and the paintings of some of the greatest masters that Italy has produced, are proverbial attractions. The paintings of Canaletto have familiarised foreigners with the harbour, the squares, and the monuments of Venice, as they existed in the palmy days of the republic; although those of Bonington, an English artist, not quite so famous, are faithful representations of its present state of desolation, and compared with those of the old Venetian painter, as a French critic observed, they resemble the picture of a woman still beautiful, but worn down by age and misfortune.

I have repeatedly seen patients positively moribund, conveyed about this city, sight-seeing, under the impression that constant *change of scene* was as necessary for their cure as change of atmosphere. Change of scene may, and does, produce good effects in nervous and dyspeptic invalids, or upon those exhausted by over-exertion, shock, or mental anxiety; but what benefits it can accomplish in patients with organic disease, like tubercular consumption in an advanced stage, I am at a loss to conceive. The invalids alluded to, or their advisers, however, seemed to think otherwise; for,

apparently, their sole object in view when visiting Venice, was to contemplate the works of Titian, the frescoes of Tintoretto and of Paolo Veronese, the statues, palaces, temples, the mausoleums of Sansovino and Palladio, whereas they seemed as if utterly unconscious of the injury they were thus doing to their health, or their frail tenure of life.

The promenade most frequented by invalids is the Piazza of Saint Mark, the largest open space in Venice, besides being the most lively part of the city. One side is occupied by the Ducal Palace and the Church of Saint Mark, with its angular front and cupolas, which remind the stranger of a Turkish mosque, rather than a Christian temple. On the other, it has regular arcades, with shops, similar to the Palais Royal at Paris. The Florian coffee house, in one of the arcades, forms the constant resort of male invalids who visit Venice, and are at all able to go about. Here they form a motley group along with Turks, Greeks, and Armenians, who seem to pass their time, reclining under large awnings, in drinking sherbet and coffee, and smoking perfumes in long rosewood pipes. The basilic of Saint Mark adjoins the end of this arcade, and is not a minute's walk distant; hence, in this extraordinary building of chequered architecture,—a mixture of Greek, Roman, and Gothic,—invalids of both sexes seldom, almost never, fail to pass a portion of the day.

It has often occurred to me while observing the habits of consumptive patients, when in Italy, that a description of the *climate*, of old ruins, cold churches, empty palaces, long picture galleries, and other places favourable for the collection of stagnant air, but where invalids notoriously pass a great portion of their time, would be much more useful and appropriate than any elaborate account of the external or natural climate of the country, which the most minute and careful observation could afford. It matters little how pure the atmosphere may be in reality, if the air the patient breathes for so many hours each day is impregnated with noxious exhalations, as it must be in the majority of instances, while he is admiring the bronzes, pictures and statues of the cathedral, or trying to decipher half-worn inscriptions on the mouldering walls of some ruin or dungeon.

The attractions of the basilic of Saint Mark, a church which has not its parallel in the world, are certainly of no ordinary kind. The mosaics, sculptures, basso-relievos, and arabesques with which it is profusely ornamented, together with the gilded arched roofs, the pavement of jasper and porphyry, the five hundred columns of black, white, and variegated marble, of bronze, alabaster, vert-antique, and serpentine, are irresistible to the foreign invalid, who soon finds his way thither, and passes hours, fatiguing his frame, gazing at the marvels of

the building, standing on its cold and sunken floor, for the piles underneath have given way in many places, and hence he breathes an air damp and impure.

The Ducal Palace, close by, has also various attractions, and I doubt whether the master-pieces of the greatest painters Venice has produced, with which the ceilings and walls of the different apartments are adorned, are so eagerly sought after as the Piombi and the Pozzi, the latter being the dungeon cells in the vaults of the palace, over which the boats on the canal pass, and with whose history so many tales of horror are connected. These horrible dens are still dismal and damp, although the walls are boarded to prevent the humidity from penetrating.

Apart from this inveterate sight-seeing mania, and the evils sure to arise in consequence, there are many circumstances connected with Venice and its climate favourable to invalids, which do not exist in localities commonly recommended for phthisical patients, farther south. The entire absence of dust, in the first place, is no small advantage—the peculiar constitution of the climate before mentioned depending so much on the topography of the city, to be described presently; and above all, the gondola exercise—the soothing and gentle motion of which is so particularly adapted to consumptive individuals.

The general aspect of these boats—for they are all painted black—is not calculated to cheer the mind, and especially at night, when they move along so silently and mysteriously, being more like floating sepulchres than the gay and illuminated boats of pleasure which at one time occupied their place. Even the boatmen seem to be influenced by the mournful appearance of their barks, or else they must be a different race from their predecessors; for instead of singing the verses of Tasso and Ariosto, as formerly, their only music is a shrill screaming, *ah eh*, which they utter at the corner of each *calle*, or street, to avoid collision with other gondolas. However, interiorly the gondola is well fitted for the ease and comfort of invalids, who can recline at full length on a soft couch, of which there is one on either side, and thus inhaling free air, when taking exercise not likely to fatigue, the gliding motion and gentle oscillation of the gondola, when passing over the smooth waters of Venice, often soothe the mind, and induce a state of tranquillity and repose.

The situation of Venice, built upon piles in the centre of a vast marsh, covered with algæ and marine plants, would apparently indicate the inappropriateness of such a locality for invalids; but the following topographical details, given by M. Carrière, may in some measure explain the peculiar

condition by which this place remains salubrious, irrespective of any diurnal exposure of the vegetation of the marsh to atmospherical action:—

That part of the lagune at the north west extremity of the Adriatic, in which Venice is situated, is of an oval form, the greatest diameter of which reaches to nearly eleven leagues, and extends from the north-east to the south-west, whilst the smaller diameters vary from two to four. The lagune is bounded by the main land from the north-east to the south, and from the latter point a strip of land is continued, with some interruptions, so as to cut off all communication between the sea and the basin of Venice except by these openings. The maritime boundary, or *Lido*, is formed by the approximation of a series of islets, on the eastern aspect of which are placed the *murazzi*, formidable groups of rocks protecting the whole from the troubled waters of the gulf. The openings between the islets serve the purpose of sluices, always free, through which the waters diurnally ebb and flow.

The north-east extremity of the lagune, being nearest to the Julian and Carnatic Alps, and not sufficiently sheltered in that direction, is exposed to the cold and impetuous wind passing over those mountains. Due north, the Alps are much more elevated, and sufficiently so to arrest, in great measure, the wind which blows from that quarter.

The west and south-west winds are interrupted by the mountain range which skirts Lombardy, but those which are not impeded in their course, and play freely over the Venetian lagune, are the south-east, or sirocco, and the east, which enters from the sea.

The south and the south-west winds also blow over the lagune, in spite of the transverse ridge of the Apennines, which at some distance crosses their path, but, according to the observations of Dr. Traversi, without the peculiarities which they present along the Ligurian shore and the western coast of Italy.* Thus the west and the north, properly so called, are the least frequent, owing to the barrier caused by the elevation of the central Alps and the adjoining summits; and the north-east, the east, and the south-east, are the winds which principally influence the climate of the lagune.

The streets and lanes of Venice are, as every person knows, navigable canals; but, besides numerous minor passages, there are three large canals, which intersect the city in different directions—viz., the *Guidecca*, *Canalle Grande*, and *Canalle Regio*, and, by promoting a free circulation of air, materially contribute to the salubrity of the place. The direction and disposition of these canals enable the land, as also sea breezes, according as they

* *Osservazioni Meteorologiste.*

may prevail, to traverse the whole extent of the city without interruption.

The former winds, which are chiefly westerly, do not present the same characters as they do in the south of Italy; they are not so mild and soft, and thus are less calculated to promote noxious exhalations or other unhealthy influences, although they pass over that part of the lagune, near the mainland, where a morass always exists. The latter, which include the different intermediate winds between the east and the south, are, on the contrary, more striking than in other parts of Italy, and their natural preponderance at the common opening of the Guidecca and the grand canal, where they arrive without interruption, enables them, according to Traversi, to establish a mild, and even a warm climate, in a temperate one. The north-east wind, which blows along the northern side of the lagune, passes over the city, for there is no passage open before it; and if this wind does depress the temperature by imparting a more moderate character, it is at the same time healthy, and it especially causes that limpid transparency of atmosphere which travellers often observe in the warmest regions of the Italian Peninsula.

The following figures, collected by J. F. Schouw, from seventeen years' meteorological observations made by Dr. Traversi, and published in the trans-

actions of the *Athenæum* of Venice, will show the character of the temperature of the different seasons, its ranges and variations, and their influence upon the general condition of the atmosphere. The mean temperature of winter is 3·35, that of spring, 12·64; summer, 22·82, and autumn, 13·26. The annual mean is 13·26; the winter mean is undoubtedly low enough, but, compared with that of Padua, or of Milan, it presents a favourable aspect, for the winter mean of Padua is only 2·80, and that of Milan is as low as 1·99. R It is, therefore, to be inferred that Venice is the warmest medical station on the Adriatic coast of northern Italy, and that the temperature rises as we approach the sea, and falls in proportion as we advance towards the foot of the Alps.

The minima of cold correspond with the preceding, for, whilst at Venice the mean is 2·5, that of Padua descends to 4·1, and that of Milan 4·7. The absolute minimum of Venice is only 6·9. The variations of temperature are especially deserving of notice, as furnishing the most certain indications in medical climatology. The variations of temperature between the mean maxima and minima at Venice, are on a much more limited scale than in the principal towns of northern Italy, and even than in some places in the south. Thus, for example, the variations in the winter season are only 11·9, whilst at Padua they are 13·5, at

Milan, 13·7, at Pavia, 16·8, at Florence to 15·1, at Rome to 15·3, and finally at Palermo, the most southern station, to 15·4.

The difference in the preceding figures is so much the more in favour of the winter climate of Venice, that it consists in decisive quantities of 2, 3, and even 4 degrees, not merely in fractions. The spring, summer, and autumn seasons present similar advantages, the variations being nearly to the same extent in each season: thus, the spring gives 14·3, summer 14·1, and autumn 14·5; whence it results the transition from one to the other is effected without disturbance of the thermal condition of the atmosphere, and almost with an appearance of equability of temperature. The transitions from autumn to winter, or from winter to spring, cannot be attended with abrupt violence, seeing the winter thermal variation, 11·9, is below the oscillation of temperature prevalent in spring and autumn. This favourable distribution of heat throughout the year places the Venetian climate, in this respect, before most other southern climates.

The hygrometric condition of the atmosphere, and the phenomena resulting therefrom, are not such as we might infer from a simple consideration of the topography of the place. According to the researches of Schouw, the winter gave, as the result of seven years' observation, a mean of five and a

half days of snow. Notwithstanding the humidity arising from the lagune and the sea, especially when the winds blow from that quarter, the hygrometer only presents a mean of 87. This is undoubtedly high, but we must not forget that there are maritime towns in southern Italy, frequented by invalids, which gives a similar mean, although they are not built in the midst of water, nor flanked by a morass.

The fall of rain is not so great as might be expected, although there are occasionally several consecutive days of what the Scotch call "drizzle," and that not in the rainy season either. The annual rain presents a mean of 933 millimetres, which is below the scale observed in several southern towns, and in the same series of seven years, above mentioned, the rainy days were limited to a mean number of 75, than which the most favoured regions of southern Italy do not present a lower figure. The barometer shows, according to Dr. Traversi, a mean of 757 millimetres, indicating that the alternations from dry to damp air are not such as to give to one condition any great preponderance over the other; and the atmosphere, although humid, is not so much so as might be inferred from the peculiar nature of the topography. These apparent singularities are explained by the manner in which the north-east wind acts upon the Venetian atmosphere. Indeed, as Dr.

Traversi remarks, in his *Observations on Climate*, meteorologists ought invariably to examine with attention the different circumstances which accompany this wind, while prevalent; for upon it depends, in great measure, the vicissitudes of the weather, and the particular character of the annual climate. When this wind blows over Venice it disperses the miasma, driving it out of the lagune, and favours the continuation of fine weather if it lasts any time.

M. Carrière says, it owes this double result to its origin and its temperature. Issuing from the northern part of the gulf, and approaching Venice, it encounters the miasma, which it repulses or confines to the main land, and its temperature being low compared with that of the other winds which prevail here, it clears the sky and renders the atmosphere transparent. But this atmospheric purification is not effected without causing a fall of rain, especially when the north-east immediately succeeds a warm and damp wind; but as soon as the rain falls, the sky clears up, the azure becomes transparent and mild, and sometimes as pure as it appears in the sub-Apennine regions.

This phenomenon is subject to certain modifications depending upon the seasons and other circumstances. For instance, in winter, instead of a fall of rain, snow supervenes, and in summer, when a struggle ensues between the north wind and the

blasts blowing from the sea, the former imparts to the latter certain conditions which they require, to produce a storm. A singular phenomenon then takes place. While the sun shines with splendour over Venice, gilds her domes and marble palaces, and also causes the waters of her canals to sparkle brilliantly, dense black clouds gather over the Adriatic, the lightning flashes, and presently a terrific thunder-storm bursts forth which expends its fury over the gulf.

The history of the action of the north-east wind in this vicinity is, then, intimately connected with the prevalence of fine weather and the vicissitudes of the seasons. This explains why rain is less abundant than might be supposed, and how the stormy winds, during the prevalence of which the largest amount of rain falls, break over the sea. It also accounts for the fact why the number of fine days exceeds the unfavourable, and is also the cause of the temperature seldom reaching a high point; for, according to the observation of J. F. Schouw, the mean maximum is 32·2.

The climate of Venice, and its topography, favour a life of indolence and voluptuous ease; indeed, the *dolce far niente* practice is more thoroughly carried out there than in any other part of Italy. The countenance of the Venetians, with its tinge of melancholy and graceful dignity, indicates a life of inertia, in which neither the moral nor physical energies are

called into activity; while the marvellous silence which reigns over this city of 120,000 inhabitants, is by no means calculated to disturb the death-like vitality so apparent in the people. All these circumstances favour the development of the nervous temperament,* and hence the Venetians generally exhibit this form of constitution, sometimes even to feminine excitability.

According to MM. Callegari and Namias, both local physicians, the nervous system of many Venetians preponderates to such an extent over the sanguineous, that venesection should be practised sparingly and with great caution even in the treatment of inflammatory diseases. If this remedy, so beneficial in other parts of Italy, be repeated incautiously, considerable nervous disturbance will ensue very generally, and when this excitement subsides, the pulse often sinks so much that death supervenes. Independently of intermittent fever, which, however, is confined to the Lido shore, some of the islands, and that part of the lagune, along the main land, where the rivers discharge themselves, nervous diseases are by far the most frequent in Venice. The freedom which the city enjoys from intermittent fever is so well known, that patients suffering from that complaint in the places now mentioned, remove to Venice, for a change of air which proves beneficial.

* Valatelli: *Della Topografia Fisico-Medica di Venezia*.

This exemption of Venice from ague, is attributed by the writers above named to the fact of the canals which intersect it being deeply encased between the walls of the houses, and their muddy bottoms being scarcely ever exposed to the atmosphere, thus preventing in great measure the formation of miasma, or noxious exhalations. The ebb and flow of the water twice a-day, and the salutary movement caused by the constant navigation, also assist in preventing malaria; and the preponderance of the north-east wind, already described, over all the others, protects Venice from those unhealthy emanations which exist in its vicinity.

The influence of the Venetian climate on the nervous system of strangers, is by no means so marked or constant as upon the inhabitants. Patients coming from different parts of Europe do not possess the same kind of temperament, idiosyncracies and habits; and if they have contracted a nervous susceptibility during the fatigue of a laborious life, or from the long duration of some chronic complaint, the mildness and equability of the Venetian climate are calculated to correct this tendency; even the tranquillity which prevails over the city will assist in attaining that end. Certain forms of paralysis and neuralgic pains are also likely to derive benefit from the climate, and as adjuvants in the treatment of these complaints, there are saline and mineral mud baths, besides

baths composed of sand and warm salt water, all of which seem to be held in esteem by the local physicians. The mineral mud bath is said to have a stimulating and resolute effect.

M. Carrière is of opinion that this climate is particularly suited for English patients, who, he says, become lymphatic under the double influence of their humid atmosphere and a nebulous obscurity of sky, which depresses the nervous system. Under a climate otherwise bright, when the solar influence is sufficiently powerful to disperse these thick masses of cloud, the nervous system will speedily be roused from its inertia into a state of healthy activity.

The character of the Venetian climate is decidedly sedative, and this quality seems to have been known to the ancients; for Strabo says that the Roman gladiators were sent to this part of Italy, on the shore between Ravenna and Aquilia, to reduce their plethora, diminish the excess of blood, and put them in good fighting condition. In consequence of this sedative or lowering effect, phthisical patients, whose systems have been reduced by protracted disease, or are naturally feeble and easily depressed, should not go to Venice, the climate of which is more suited for invalids in the early stage of consumption, or the commencement of the second period, especially those of an irritable or sanguineous habit. The mildness of the air, and

the gradual and infrequent transitions of weather, are a guarantee against sudden or violent shock to the lungs.

M. Carrière is of opinion, that the peculiar condition of the temperature, and indeed of the climate in general, tends to arrest the progress of transition from one period to the other, which, unchecked, often takes place with great rapidity. If the patient is of a scrofulous habit, the causes which favour this form of constitution may be attacked during the abeyance of the disease; and in these cases, decoctions of the marine confervæ, which grow in the lagune, are recommended by the local physicians as efficacious resolute agents.

If the sanguineous temperament should predominate, the beneficial effect of the climate becomes still more evident. The inflammatory tendency will diminish; hæmoptysis, should it exist often ceases, if simply the result of irritation; and in these cases also, recourse may be had, but with great caution, to the algæ and other marine plants, with the view of arresting any further deposition of tubercle, and of aiding the resolution of that which is already formed. If the Venetian climate proves sanative, in cases of pulmonary consumption of the class referred to, it ought also to act beneficially in some of the allied diseases,—as chronic inflammation of the mucous

membrane of the bronchi, old cases of catarrh, and even in asthma having a nervous origin, or associated with lesions of the heart or large blood-vessels.

The period of time during which the invalid may sojourn at Venice, is much more extended than at any other station in Italy. The temperature is moderate during the extreme seasons. The east wind, producing the same effect during the winter as the sirocco winds do in their season, raises the temperature. In summer, it produces a contrary effect, and cools the atmosphere. The same phenomena occur in other parts of Italy—but are due to the west wind. Independently of these analogies, however, the climate of Venice is exceptional. The topography of the place indicates this. The atmospheric transitions are not so striking, and are less frequent than in other parts of the Italian peninsula; hence invalids may pass the winter there with advantage, from the close of autumn even to the end of spring. The most favourable part of Venice, as a residence for the consumptive invalid, is also the liveliest and most beautiful quarter of this singular city. It embraces the Piazza of Saint Mark, the Piazzetta, and the greater portion of the Grand Canal, as far as the Rialto.

When the Venetian winds, says M. Carrière, do not disturb the atmosphere, nothing is more sooth-

ing or congenial to the consumptive invalid than a sail in a gondola, a mode of conveyance that seems peculiarly appropriate to his condition ; for it glides as it advances, and the voluptuous ease its movement produces is not disturbed by any sound. Other gondolas glide silently along, and if animated Venetian conversation should momentarily disturb this repose, it will not do violence to the associations and impressions around : for everything in this marvellous city seems to harmonize with its climate.

Nevertheless, in spite of all its associations, its sanatory advantages, and its renown, this Palmyra of the sea is doomed, according to the opinion of many observers, to sink under the waves of the Adriatic some sixty years hence, and leave no trace behind.

CHAPTER VIII.

Ligurian Coast.

CLIMATE OF GENOA.

GENOVA LA SUPERBA, as the Genoese delight to call their famous city, is one of the last places, not only in Italy, but throughout Europe, where I would feel justified in recommending a foreign consumptive patient to pass any time. The topography of the place will readily explain why it is so ; yet the aspect of Genoa, approaching from the sea, is unrivalled by that of any other city in Italy. Its palaces, terraces, and balconies of white marble, planted with orange trees, like hanging gardens, are truly superb, nay, justify the title of *La nobil citta*, given to it by Tasso.

Indeed, the Ligurian coast from Nice to Genoa including the towns of Villa Franca, Menton, and San Remo, is equally captivating to the stranger. It exhibits a succession of promontories covered with olive groves, whose pale verdure strikingly contrasts with the vivid green of the pines, the orange, lemon, and chestnut trees. Immense palaces, cupolas, steeples of churches, interspersed with rocks and torrents, add to the effect of this vast decoration. In some

parts beautiful valleys under cultivation extend by the sea-side, and form smiling bays of verdure even close to the water's edge. Along this beautiful coast nature unfolds at every step some of her most magnificent scenery. What more is there wanting to tempt the wandering invalid to take up his residence for a time, at least, along so lovely, but treacherous a shore? And so we find that almost every patient proceeding to Pisa, by the picturesque road lately constructed through this district, finds some excuse to repose awhile at Genoa.

Whatever charm or historical interest may attach to the marble palaces, superb monuments, and general appearance of this city, its climate has, however, no attractions. The vicissitudes of temperature are rapid and extensive, whilst the biting coldness of the *Tramontana*, or north wind, alternating with the warmth and humidity of the south-east, both of which are the prevailing winds of Genoa, become sufficiently trying even for the strongest and healthiest lungs—hence physicians find that the most fatal and prevailing diseases are inflammation of the lungs, and respiratory organs generally, as also pulmonary consumption.

The situation of Genoa, built as it is upon a steep declivity close upon the sea, the lower parts of which inclose the roadstead and harbour with the Apennines ridge immediately behind—so close

and lofty that it seems even to push the city into the gulf, show pretty clearly what may be expected from various anemological and hygrometric conditions of the atmosphere. The interior of Genoa presents a very different aspect to that seen from the sea. A number of narrow, winding, and irregular shaped streets, or rather lanes, intersect the city, and run into the three principal thoroughfares at different points, forming a sort of maze as puzzling to the stranger to find his way through as the labyrinth of the Seven Dials formerly proved to the London sight-seers. M. Carrière describes the form of the city as a sort of triangle—the point facing the west, and the sides gradually diverging towards the east, where they expand into a sort of square, which is both the ugliest and most populous neighbourhood. The Apennines rise upon the north side, and the Mediterranean bounds it on the south. The city is built between two mountain torrents, the Bisagno and the Polcivera—the former discharges itself into the sea at the eastern extremity, the latter near the western end of the mural boundary.

Notwithstanding the apparent protection of the mountains in the back-ground, almost every wind that blows seems to have free access, and several of them enter the streets and public places with a violence and precipitancy unknown in any town of central Italy.

The depressions in the mountain range readily admit the north wind, which blows from that direction towards the gulf; and the north-west, entering from the western extremity of Genoa, blows with similar violence as along the quays at Naples, besides being as bitter and cold as in some parts of Provence. The north-east wind possesses nearly the same characters as the north.

According to Cevasco's opinion, in his "Statistics of Genoa," the east and the west are the most favourable winds. The former is, however, more humid, and its temperature ranges higher than in central or southern Italy, peculiarities which may be explained by its recent course across the Mediterranean. The west is in reality the summer wind, but it assists in cooling the atmosphere during winter; and this circumstance seems the result of the route it takes when approaching Genoa. The west wind, Cevasco also says, is the only one which has a regularly periodic course, and he calls it the zephyr, or "poetic wind of Liguria." The southerly winds possess their usual characters in this region. The south-east, or *sirocco*, is warm, humid, impetuous, and depressing, bringing in its wake a kind of fog, called by the inhabitants *cuin*, which withers the flowers in harvest; and here, as in other parts of Italy, prevails principally during autumn.

The south is the rainy wind; but however violent

it may blow during winter, it never attains the same force as the south-west, or *Libeccio*, which often agitates the sea so much as to dash its surf over the quays and harbour. All these winds are more or less humid, and by their alternations with land winds occasion violent atmospheric convulsions, or hurricanes, which then, rushing down from the mountain, sweep the town, and expend their fury in the Mediterranean. These commotions generally take place during the transitions from spring to summer, or from the latter season to autumn: when they occur at the latter period, they generally form a thunder or hail-storm, and are highly electrical. But in the early period of the year, between winter and summer, they are not so prevalent, and degenerate into those cold spring showers which the Genoese denominate *frasche di maio*.

When fine weather has fairly set in for the season, lateral breezes then blow from either extremity of the city; hence the east and the west winds assume the preponderance, with a tendency to the south-east and south-western directions—without, however, lapsing actually into those particular winds. They subside towards evening, and are succeeded by the north wind, which blows during the night. Cevasco considers that there are many points of resemblance, in this general distribution, between the phenomenon noticed in the Ligurian atmosphere and those which take

place along the western extremity of Europe, and the Genoese coast seems the point of union that associates the Italian peninsula with the Atlantic shores.

The mean of the winter temperature is higher than might be supposed. Schouw reports it as 8·49, being higher than at Rome, which gives 8·1. But that does not prevent thermometric vicissitudes from occurring frequently during the cold season, and so causing a soft and mild day to succeed one which was cold and sharp. Some idea may be formed respecting the degree of cold to which the temperature sinks within the walls of Genoa, from that which occurs in the adjoining mountains overhanging the town. Cevasco says, the thermometer descends to 12, and exhibits a mean maximum of 7·50, or 8. The different periods when the vegetation of the adjoining country and of the city gardens was destroyed by frost, may also be mentioned. Although this disaster occurred only twice in the present century, viz. in 1820 and in 1849-50, Cevasco says, the oranges, citrons, and every description of vegetation in the south, were destroyed six times in the last century—namely, during 1709, 49, 62, 82, 89, and 92. These congelations are much less frequent in the western valleys of central Italy.

Although belonging to the same climate, Liguria, or at least that portion lying in the neighbourhood

of Genoa, presents a very unfavourable contrast, owing, according to M. Carrière, to the depressions of the mountain, upon whose slopes the city is built, and which almost place it in communication with the plain on the opposite side of the Apennines. The northerly winds, already cold when entering the valley of the Po, after having crossed the Alps, lose none of their impetuosity or other characteristics in crossing the transverse ridge which bounds Liguria. In other districts along the same shore, where the mountains are higher and free from depressions, and consequently less influenced by those ungenial winds, the temperature becomes milder, and freer from capricious variations, and vegetation is more protected than it is in the Genoese territory.

The topographical peculiarities of the neighbouring coast, its indented or curved outline, assist in predisposing the locality to receive humidity conveyed by the southerly winds. This, together with the mountains adjoining, rendered cold by the bleak winds that pass over them, especially during the winter period, induces a remarkable hygrometric condition of the atmosphere, and causes a great quantity of rain. The hygrometric mean is stated as 81·6, in the *Guida di Genova* of 1846—the amount of rain being, in the opinion of Cevasco, 1280 millimetres, although Schouw states it to be 1380 millimetres. According to the distribution

of the seasons, reported by the latter author, summer appears comparatively dry, caused no doubt by the frequent intervention of northerly winds, which clear the air, as also the preponderance of westerly winds—the zephyrs of Liguria.

As to other seasons, they are very rainy, especially autumn, which yields the greatest amount of rain, analogous to the more southerly parts of Italy.

The preceding details characterize sufficiently the climate of Genoa, the air of which, M. Carrière says, is inclement. However pure and transparent it may be during the prevalence of fine weather, it is too liable to sudden gusts of wind, and violent transitions, not to subject the invalid to dangerous shocks of the system. These baneful influences occur in every season, except at the period of the year when the *Ponentelli*, the Ligurian zephyrs prevail, which temper the premature warmth of spring, and moderate the burning heats of summer. Wherefore the best period to select for visiting Genoa is about the beginning of summer, or towards the close of the preceding season, and then only for invalids who are not consumptive.

Many phthisical patients who have spent the winter at Pisa, in proceeding to northern Italy, or to the north of Europe, at the approach of summer, are nevertheless tempted to halt at Genoa, especially if travelling by land. When Cevasco, who appears prepossessed in favour both of the city

and climate, admits that pneumonia, hæmoptysis, catarrh, and consumption, are amongst the most frequent diseases, it becomes pretty evident that Genoa cannot prove a very favourable halting-place, during even a short period, for phthisical patients, at whatever stage their complaint may have arrived.

Some writers entertain an opinion that the climate of Genoa may be beneficial in certain complaints of a nervous and lymphatic character, in which a stimulating atmosphere is not contra-indicated. But the period extending from the commencement of autumn to the early months of winter, should not be selected, as it embraces the seasons in which the greatest amount of rain falls, and the severest cold is experienced. The diseases in which M. Carrière considers the Genoese climate to be of use, are certain forms of paralysis associated with a scrofulous constitution, general paralysis, not of a congestive character, some forms of mental alienation, and melancholy, or hypochondriacism. The variety and novelty of the impressions derivable from the adjoining mountains, the peculiarities of the city itself, which they overhang, and the rich garden terraces overlooking the sea, are calculated to dispel melancholy, by exciting interest and giving a new direction to the mind.

Owing to the peculiarities of its situation, Genoa is exposed to the influence of the winds from every

quarter. The two shores of the gulf and the separation of the mountains in these directions, give access to the lateral winds—the favourable elements of the climate. But, on the other hand, the north-west precipitates itself upon this locality with the same intensity as on the coast forming the gulf of Naples. The north and the south intervene from these points, the former with less preponderance, but still with sufficient force and duration to constitute the principal meteorological element of a season. Throughout the other regions along the Genoese coast matters are, however, different.

From Genoa to Spezzia, in the easterly direction, the route extends through a series of towns and villages, sufficiently elevated above the sea, sheltered by high mountains, and presenting, in every way, more favourable conditions for residences for invalids than the central city of Liguria. Nervi, Chiavari, Sestri, Moneglia, are situated along the coast, the vegetation of which, approximating closely to that of southern Italy, leads M. Carrière to draw favourable inferences respecting the topography of these places. But, as I have elsewhere observed, vegetation, even the most luxuriant, is no indication of the sanative influence of a locality, at least in the manner in which this writer interprets such an opinion. It indicates simply a high temperature and moisture, atmospheric conditions always liable to vicissitudes.

This author also considers the climate of Nervi to be particularly mild, and the other places named scarcely less so; and the reason that they have not hitherto attracted the same attention and enjoyed the same celebrity as the westerly stations of Menton, Nice, and Hyeres, he thinks, is, that the latter places being situated on the route between France and Italy, or in the neighbourhood of populous localities, are indebted mainly to these circumstances for the attention they have hitherto attracted, whereas the former being situated in localities away from the common routes, have been therefore neglected. But at the same time, were these localities properly investigated, they would be found not less salubrious or beneficial to invalids than their more favoured rivals.

Indeed, latterly, many foreigners in search of health have taken up their residences among those villages, attracted by the natural beauties of the country, love of change, and a vague feeling as to the beneficial qualities of the climate. Scientific observations, however, are wanting to test the accuracy of this opinion in a sanatory point of view.

CHAPTER IX.

Central Italy.

CLIMATE OF FLORENCE.

IN no part of England could a climate be found more unfavourable for consumptive invalids than that of Florence, a town built in a deep ravine, almost surrounded by the Apennines, and intersected by a squalid river. But Florence is within a few hours' ride of Pisa, one of the chief depôts for foreign patients of this class in Italy, and the fame and artistic attractions of the city of the Medici are irresistible to the dying visitors who can at all move about. In the renowned capital of Tuscany, wandering amongst its splendid, but cold and damp, churches, its palaces and picture galleries, many an English invalid annually hastens his end; and it not infrequently happens here, as in other cities of the south, that the places most frequented, and possessing the greatest attractions, are of circumscribed dimensions and badly ventilated.

For instance, visit the far-famed *Tribuna* of an afternoon, in autumn, and there you will find in a small octagon chamber, like a moderate-sized

boudoir, containing the most valuable gems of antiquity, and some of the finest paintings in existence, a crowd of eager spectators, even including invalids, jostling each other from want of room, gazing for hours together upon the immortal works of art around, whilst breathing all the time a heated, confined, and impure atmosphere. An observer will not remain long before his attention is arrested by the ominous, short, dry, jerking cough, and, on looking round, he is sure to see the same stereotyped picture of the "English disease" so painfully familiar to travellers throughout Italy, supported on the arm of an attendant, staring at the marble statue "that enchants the world," which often seems more alive than the gazing invalid.

But the injurious effects of breathing heated and confined air in this sanctuary of the arts, are unheeded by its votaries. The visitor is dazzled with the marvellous productions in sculpture and painting, which surround him. The divine statue of Cleomenes, the goddess of the Tribune, set in the middle of the apartment, in vivid contrast with the voluptuous painting of the same deity by Titian, suspended on the wall behind, the colouring of which is sublime, and appears as if painted yesterday; the Apollo, the group of wrestlers; the graceful Fornarina, and other chefs-d'œuvres of Raphael, are a few amongst the unique objects of art contained in this cabinet, having its cupola inlaid with

mother-of-pearl, and pavement of tessellated marble, which are sure to rivet the attention of every invalid, and detain him, perhaps for hours, unconscious of the price he will have to pay for all this pleasure.

At length, leaving the Tribuna and its heated atmosphere, he wanders through the adjoining galleries and corridors, where the "climate" is totally different, or perhaps visits some other public building, until tired nature reminds him of the fatigue he has gone through, when he returns home wearied and exhausted. As long as the excitement continues, little or no fatigue is experienced; indeed, it is often surprising how much physical exertion even the frailest will endure under this temporary stimulus; but reaction assuredly follows, attended by prostration, which cannot improve the health of a consumptive invalid. I have seen many examples of this description in different parts of Italy, and have often myself personally experienced the ill effects attendant upon sight-seeing in that country, although at the time in good health. It was not the ordinary fatigue of long-continued bodily exercise, but the depression resulting from breathing impure air in damp, cold churches, the heated and confined atmosphere of crowded apartments, or the malaria generated amongst ruins.

It will not be sufficient to warn invalids against the evil results following sight-seeing. Patients able

to accomplish so long and so fatiguing a journey as that from London to Rome or Pisa, are not likely to display such abnegation as to resist the powerful attractions by which they are surrounded, however warned as to the consequences. At least such was my observation when sojourning in Italy; for, go to whatever point of attraction I would, in any town of note in that country, I was certain to meet some of those "melancholy spectacles" of human misery before mentioned, who ought never to have left the comforts of their own homes.

When all the "lions" of Florence are exhausted, excursions are frequently made to the neighbourhood; for example, to the ruins of the villa of Pratolino, associated with the adventures of Bianca Capello, to the supposed site of Boccaccio's gardens; even distant Valambrosa, with its gloomy shades and dark avenues, where the sun never penetrates, presents no impediment to the adventurous, sight-seeing invalid, as I can testify. Amongst the public walks and promenades generally frequented, the gardens of Bobboli are the best situated, whilst the Cascine, or public drive, is the worst. The latter corresponds to Hyde-park, and is a long narrow strip of reclaimed ground, in the valley of the Arno, between the hills, partly planted, and skirted by the river, which forms a turbid stream in summer, and becomes a mountain flood in winter; or even, occasionally, inundating both Cascine and

town, so that boats have been employed to go from house to house, as occurred in 1844.*

From its sunk situation, the Cascine is exposed to the mists and fogs of the valley, as also the damp vapour of the river banks, and the air circulates freely in but two directions—namely, up and down the course of the river. The mountains on either side exclude the lateral winds, except when they come in gusts. During winter, sometimes intense cold prevails in Florence—more so even than in England. The surrounding hills are frequently covered with snow, and a sharp cutting wind from the Apennines often blows like the blasts of Siberia.

The road from Bologna to Florence crosses the Apennines, which, on that side, are gloomy, arid, naked mountains, exhibiting scrubby vegetation, and an appearance altogether different from the grandeur of the Alps. However, on arriving within four or five miles of the city, the scene is entirely changed. From this distance, the approach, or rather descent, to Florence and its environs, is enchanting. The aspect of nature is now gay and

* The Arno, with all the sweetness and poetry of its name, is but a tortuous, devastating torrent:

Uh fiumicel che nasce in Fatterona

E cento miglia di corso nol sazia,

says Dante, describing its numerous windings. The soil it washes down gives the stream a yellow hue, and the water is not drunk at Florence.

brilliant, the cultivation excellent, every eminence is studded with charming villas and undulating shrubberies, in which the olive tree abounds. The walls on either side of the way are covered with flowers of every hue growing in profusion, and which form, as it were, a continuous parterre almost to the city gates.

The view of Florence, on a fine day, from the top of the last hill, with all its domes and towers glittering in the sun, and surrounded by its charming environs, is rich beyond description. The "fair" city lies at your feet, and the Arno, by which it is intersected, winds along the valley until finally lost to view in the bendings of its course through the Apennines. Such is the first aspect of Florence; and when we remember, that within its walls are contained the wonders of ancient and modern art, and many objects sure to gratify the senses or delight the imagination, we can scarcely wonder that such attractions should prove irresistible to the neighbouring colony of English invalids resident at Pisa; but how fatal and how treacherous all these dazzling allurements often prove to foreign visitors afflicted with consumption may be conclusively seen from the following details by M. Carrière :

The valley, or hollow, wherein Florence has been built, is of a more irregular and less rounded form than that in which Rome is situated. The mountains surrounding the former are high in one place,

low in another. On one side they approach the walls of the city, at another point they diverge. In the northern direction they rise to a considerable elevation, and their heights are sufficiently near to be seen even when the atmosphere is not very clear. Towards the north-west boundary they recede, and by so doing widen the right bank of the river, and contribute towards the formation of the plain in the western environs. The river runs through the centre of the city, forming in its course the valley of the Arno.

The winds are distributed according to the hygrometric law. The most frequent pass along the valleys, or by the least elevated parts of the amphitheatre of the adjoining mountains. The upper valley gives passage to the south-east; the plain, which is below Florence and protected on the north-west and west, gives play to the south-west; next, in the order of succession, come the north, the east, and the north-east, the west, and the south. The inferior range of the east and the south winds in the scale of the anemological influences, is occasioned by their progress being arrested by the heights; but the frequency of north winds cannot easily be explained, as they ought to find an obstacle in the mountain amphitheatre that bounds Florence on that side.

The inequalities of the Apennines, in some parts, should also be taken into consideration from form-

ing several openings in the mountain barrier, by which various winds enter the valley of Florence, and blow with considerable impetuosity. This may, in a measure, account for the frequency of the north wind. Lancisi makes an important observation, founded on his practical experience of the Italian climate—viz., that it is much more difficult to keep out the north than the southerly winds. The former he considers as descending winds; that is, coming from above, whilst the latter are ascending winds, or passing from below upwards: hence he infers that a hill, or a thick wood, is sufficient protection against the south, whereas high mountains, with an unbroken summit, are necessary to counteract the progress of the north winds. The latter are pure and rarefied, because they belong to the upper strata of the atmosphere, whilst the south winds are impregnated with condensed vapour and terrestrial emanations.* M. Carrière observes that this is not mere theory, but the result of sound analysis. Moreover, that the north winds, whose temperature is reduced by their passage across the summit of the Apennines, struggle with, and oppose to a greater or less degree, the sultry and humid sirocco, and even the south-west or Libeccio, to a certain extent. It necessarily follows that whenever these transitions occur—and they are sufficiently frequent—they profoundly affect the system.

* *De nativis cœli Romani qualitibus.*

The general character and variations of temperature, through the different periods of the year, show the refrigerating effect of such influences upon the climate of Florence. According to tables drawn up by Mahlmann, the winter mean is 6, 8, a degree of temperature much below that of most of the stations in central Italy; whilst, on the other hand, the summer mean is more than one degree higher than that of Rome, where it marks 24, whereas that of the latter is but 22, 9. Thus there is extreme cold in winter and great heat during summer. The advantage possessed by the climate of towns situate west of the Apennines, and in the neighbourhood of the Mediterranean, of approximating the extremes of winter and summer, so as to reduce the extent of the thermometric range, does not exist with regard to that of Florence.

The changes of temperature during the different seasons will be seen from the following details, by J. F. Schouw, the result of nineteen years observation:—The mean of the winter minima is 1, 11; the mean of the maxima of the same season is 14, 01; the mean of the minima of spring is 5, 36; that of the maxima, 22, 41: for summer, the former gives 15, 06, the latter 31, 08; and for autumn the corresponding numbers are, 7, 30, and 23, 37. The annual mean of the minima and maxima, calculated upon the preceding results, is, for the first, 6, 69, and for the second 22, 76. The same details

give as the means of the absolute minima and maxima 5, 3 and 35, which shows sufficiently the depression of the temperature in winter, and its considerable elevation in summer.

The barometric variations are by no means so remarkable as the thermal vicissitudes, and indeed are scarcely different from those observed at Rome. The barometer gives a mean of 748 millimetres, showing that the ordinary pressure of the atmosphere is not very considerable. It depends on the prevalence of the southerly winds, the influence of which is to depress instead of elevating the mercury. The state of the atmosphere implies a decided condition of humidity, a continuance of cloudy weather and rain. The sky at Florence is sometimes remarkably clear. During the heat of summer it presents a clearness and brilliancy equal to that of Rome, and even to that of the Campagna of Naples; but, generally, it resembles more the Milanese atmosphere, the transparency and colouring of which are not so strongly marked.

The hygrometer, which gives a mean of 74, does not sufficiently indicate the annual prevalence of humidity: but the rain measure shows it clearly enough by the elevation it attains. The rain at Florence gives an annual mean of 963 millimetres, or 937, according to different calculations. Florence is then one of the stations of the western zone of Italy where it rains the most, although the

mean of the rainy days is not very high ; for it is only 114. This is accounted for by the violence of the storms, which give a considerable quantity of rain in a comparatively short space of time, and cause such frequent inundations ; hence the Arno is as remarkable as the Tiber for its constant overflowing, and the disastrous results it occasions.

The preceding observations are sufficiently characteristic of the climate of Florence, and significant as to the baneful effects even a temporary residence must produce upon the health of foreign consumptive invalids. Extreme cold in winter, great heat in summer, the prevalence of the northerly winds, the chilling effects of which are not always neutralized by the antagonistic winds, rapid and violent transitions, profoundly affecting the system, even in healthy persons ; and combined with these violent atmospheric and thermal variations, are also in similar proportions, hygrometric and electric ever changing influences.

The character of the people of Florence is typified in its climate. Their temperament is nervous, excitable, *vivace*, and subject to as fitful changes as the splendid sky above. Dante even reproaches his countrymen for this excessive mobility of disposition, which is the same now as when he wrote his *Divina Commedia*:—

Quante volte del tempo che rimembre
Leggi, monete, officii e costume
Hai tu mutato, e rinnovato membre.—*Purgatorio*.

This irritability of constitution in Florentines is strikingly displayed when the system labours under disease. Nervous excitability is a predominant feature in almost every morbid condition. Even inflammatory diseases take a nervous form, and pneumonia is marked by a suffocating character and rapid progress to its last stage. The powerful action of the climate of Florence upon the nervous system may be useful in cases of paralysis, melancholia, and in persons of a sluggish and lymphatic habit; but when the respiratory organs are involved, however slightly, it acts injuriously, and in pulmonary consumption its baneful effects are rapid and fatal.

Leghorn, which is the port of Tuscany and the point of arrival and departure of many foreign invalids, has little to recommend it even as a temporary residence. It is built in a sunk locality, surrounded by a flat marshy country. Its streets are filled with beggars, and galley-slaves with chains to their feet. The quarter of Venezia, so called from its canals, is the haunt of assassins and smugglers; and the promenade of Ardenza, the Corso of Leghorn, extends along an arid beach, which is ill-suited as an exercising ground for persons suffering from disease of the respiratory organs.

The English cemetery at Leghorn is singularly

touching. In spite of the excessive brilliancy of the marbles, the aspect of so many tombs of foreigners, who died on their arrival or when about to embark on their way home, is melancholy. Most of the inscriptions are remarkable for an affecting conciseness and simplicity. Many of those strangers, full of youth and hope, came to recover their health in the land that has devoured them. The tomb of Smollett is the chief point of attraction in the English burying-ground.

CHAPTER X.

Central Italy.

CLIMATE OF PISA.

RAVENNA, with its ruins, desolate aspect, and vast marshes surrounding it, like another campagna of Rome, is dreary enough; and the gloomy pine forest, which covers it towards the sea—a kind of funeral pall thrown by nature over the wrecks of this fallen city—does not enliven the scene. Ferrara is dull, solitary, and deserted, with the grass growing in the streets, and the slime rankling upon the surface of its stagnant moat; yet amidst all this desolation, in both these places, there is still some vitality which engenders hope. But the dismal aspect of Pisa surpasses that of any other city or place in Italy, and is calculated to inspire the mind of the stranger with anything but cheering emotions.

Every object, animate or inanimate, within this melancholy town, seems stricken with decay or death. Although its population once numbered one hundred and twenty thousand souls, Pisa is now little more than a sepulchre. The solitude of

its streets is such that many of them have echoes ; and one might often ride round its walls without meeting a single person. Here and there the gaunt figure of some moribund invalid stands before the traveller, while viewing those few monumental relics of former greatness which Pisa still retains,—a dying foreigner vainly seeking, amidst these mouldering and silent walls, for some respite from a doom that is only hastened by the means taken to avert his fate.

If Pisa is not the “city of the dead,” it is most assuredly the city of the dead alive ; for who can walk through its streets, especially in the English quarter, without mourning over the traditional delusion which has enticed so many natives of England to seek a renewed lease of life in a foreign country, and find only an Italian grave ?

Pisa is now, and has been for many years, the great central depôt, for foreign consumptive invalids, throughout Italy. The fame of its climate in cases of pulmonary consumption is universal, and quite equal to that of Rome. Yet, singular to relate, there is no other medical station in any part of the continent whose climate has been less carefully investigated by scientific men, and concerning which there are fewer positive data, derived from meteorological observation, than that of the far-famed Pisa. This seems the more strange, as Pisa has long been the seat, and, until

very recently, of a university of considerable repute.

This climate is mainly indebted to tradition, and some vague unsupported statements, and random assertions, for its wide-spread renown. There is, however, one element in the composition of the Pisan climate pretty well ascertained, and admitted by writers of every shade, namely, that it is "horribly rainy." In fact, that rain forms one of the essential conditions of the climate. Alfieri hurls against this great inconvenience a poetical malediction :

Mezzo dormendo ancor domando : Piove?
Tutta la intera notte egli è piovuto,
Sia maladetta Pisa! ognor répiove
Anzi, a dir meglio, e' non è mai spiovuto, &c.

M. Carrière, who has also failed to discover any solid foundation for the sanative fame of the climate of Pisa, thinks that the neighbouring localities have contributed a good deal to this notion. Etruria, he justly observes, is one of the most beautiful regions in Italy. The environs of Florence are delicious. The valleys which lead from the Etruscan capital to Pisa present a succession of pictures, full of charm and animation. The baths of Lucca and Pisa, and the historical souvenirs of the latter place, together with its monumental association with by-gone ages, succeed in forming an allurement almost impossible to resist. Hence

it is to this day as much frequented as ever by invalids. The fame of Pisa is in no way diminished, and there are few patients afflicted with pulmonary consumption who visit Italy who do not select this city as a residence, from the alleged curative effects of its climate.

One might expect that Barzelotti, who practised medicine for twenty years at Pisa, would have been able to furnish valuable information respecting the climate of this place; but his *Medical Guide for Italy* contains nothing precise or definite upon that question. The only meteorological observations worthy of note in regard to the Pisan climate are those reported by Schouw, from documents by Piaccini and Tilli, and some unpublished researches furnished by Professor Pannati to M. Carrière, of which I shall avail myself in the following remarks.

Pisa is situate near the opening of the last of the chain of valleys watered by the Arno, and distant about five miles from the Mediterranean. The country is flat between the city and sea-shore. The river Arno intersects the town, running from east to west, and forming in its course within the walls a considerable bend or semicircle, the convexity of which faces the north, and the concavity forming, as it were, a sort of apparatus or mirror for converging the solar rays, whereby it imparts along a considerable extent the warm influences of

the south. This locality is called by Tuscans the Lung' Arno, and is the quarter selected for their residence by those consumptive invalids who migrate to Pisa, to pass the winter season.

The solitude and silence of the adjoining streets are most striking. Parts of the city are altogether abandoned, forming a desert with grass and weeds growing rank in streets that were once thickly populated. The profound silence which reigns through a great part of the town—so different from that of Venice, where the noiseless gondolas constantly gliding by give a vitality to the scene—is in striking contrast to the tumultuous gaiety and stirring life of the neighbouring Tuscan capital. The sky is even not more brilliant than the general aspect of the place. It is dull, often murky, and frequently surcharged with humidity.

About three leagues from the town, an amphitheatre of the Apennines extends from the south-east to the north-west, forming an almost continuous barrier against the winds from that quarter. On the eastern side, there is an opening leading through the last chain of valleys, where the Arno enters the plain in which Pisa is situated. From the south to the north-west there are neither mountains nor hills; the plain is very open to the beach, at a distance of about three leagues, nearly the same interval as that between the walls of the city and the mountain amphitheatre just mentioned.

From this geographical distribution, it appears that the town is in great measure exposed to the warm influences of the south, whilst it becomes to a certain extent sheltered from the cold winds of the north. Unhappily, no positive data exist to show the annual distribution of the various winds. The geographical disposition of the soil is our only guide. This indicates that the town is protected from the north-west to the east, in those points where the cold winds would otherwise gain access ; and from the east to the south-east and south the mountain barrier gradually sinks, until it finally disappears altogether. Hence the winds blowing from this quarter have free access.

Barzellotti considers the high walls around Pisa materially assist in protecting it from the cold winds, especially the Lung' Arno, or that quarter where the invalids reside, the influence of the northern winds being only felt on the left bank of the river, and the south side of the town. The antagonistic winds coming over the sea, charged with watery vapour, and more or less warmth, reach the city without meeting any obstacle in their path, and so modify the climate.

M. Carrière institutes a comparison between the annual mean temperature of Rome and that of Pisa, with the view of showing the advantage which the latter city possesses in this respect over the former. Hence that author is entirely at issue

with Sir James Clark respecting the winter temperature of these stations. He says: "Clark n'est pas exact, lorsqu'il établit d'une manière absolue, la supériorité thermale de l'hiver Romain sur l'hiver Pisan; il ne l'est pas davantage, lorsqu'il écrit que ce dernier est moins doux et moins accablant que l'autre. Les conditions hygrométriques, sous lesquelles est placé le climat de la ville Etrusque, vont le démontrer."

However dogmatic this assertion may appear, M. Carrière admits that he is at a loss to reconcile certain facts collected by himself, with others apparently contradictory, as to the question of temperature, which were derived from a reliable source. According to Schouw, the mean temperature of the season, taken from three series of diurnal observations, gives 7·82 for winter, 14·82 for spring, 23·23 for summer, 17·31 for autumn; and these figures will give 15·84 as the annual mean for Pisa. The winter mean at Rome is, however, a little higher, as it exceeds 8. The latitude, which is one degree farther south than Pisa, seems to compensate for the refrigerating influence of the north winds, to which Rome is so much exposed. But in other seasons Pisa, which is better sheltered from the north than Rome, has certainly the advantage. For example, the summer mean of Rome is 22·9, whilst that of Pisa is nearly 23 and a quarter; thus

giving an annual mean $\frac{44}{100}$ higher in the latter than in the former.

Nevertheless, the winter is colder at Pisa than at Rome. This fact has been already demonstrated by comparing the mean of that season in each place. It will be still more clearly seen by a comparison of the average minima of both stations. Schouw gives the absolute mean of the minima, for winter 6·2, for spring 1·2, and for autumn 1·8. From documents furnished to M. Carrière by Professors Pannati and Cintofanti of Pisa, it appears that 5·3 R. was the minimum of January 1836, the north and north-west winds prevailing; 1·5 for February, and 0 the minimum for March, without mention of the prevailing winds in either of the latter instances. In another series of observations, embracing the years 1822, 1823, 1824, and 1825, M. Carrière gives as the minimum of the first of these years 2·5, for that of the second 2·5 also, for the third 2, and for the last 0.

The marked difference between the figures in this series of observations and those of the year 1836 would imply that one or other were incorrect. But the position of the instruments, and the locality in which the above observations were taken, will explain any discrepancy; so that although the figures may be different, the conclusions may still be correct. For example, in taking the

observations of the four years above mentioned, the thermometer was exposed in the open plain, about six miles distant from Pisa, and in an east-south-east direction from the walls of the city. With regard to those of the year 1836, the position of the instruments and the locality where they were placed are not mentioned. But if the crescent, or Lung' Arno were selected, warmed as it is during the greater part of the day by the sun's rays, the thermometer would evidently indicate a high temperature, and yield a winter mean considerably above that of Rome.

It results from the preceding remarks, that although the winter temperature is higher in a general point of view at Rome than at Pisa, the locality inhabited by consumptive invalids at the latter place, owing to its peculiar position, is more favoured in that respect than any part of Rome. But instead of being an advantage, this very warmth proves, in my opinion, positively injurious to consumptive invalids, owing to great atmospheric humidity and constant evaporation from the adjacent valleys, along the low swampy banks of the Arno, and the collections of water, scattered here and there over the Pisan plain.

The hygrometer seldom marks "dry" at Pisa, in consequence of the great prevalence of the southerly and Mediterranean winds. And if the rain does not fall in those dense masses so com-

mon at Naples and in the campagna of Rome, nevertheless yields a high annual amount. Schouw gives, as the result of six years' observation, an annual mean of 1 metre 205 millimetres, and 1 metre 42 millimetres, for thirty. Pannati gives even 715 millimetres for the first six months only of the year 1828. This mass of rain does not fall principally in any one season, as autumn, for example, which is the rainy season in most of the medical stations throughout Italy. It is distributed through all the different seasons, so as to furnish a considerable quantity to the period of the year that is dry elsewhere.

Schouw gives as the differential quantities for the seasons—255 millimetres for winter ; result of three months' observation ; 229 for spring ; 175 for summer ; 475 for autumn. Although it would be difficult to ascertain from these facts the precise proportion of gloomy or rainy days, to fine clear days, still it is evident that the former must be considerable, from the manner in which the rain is distributed, and the absence of violent storms. Enough, however, has been shown to demonstrate the humidity of the atmosphere, and the unusual quantity of rain peculiar to the climate of Pisa ; and, as M. Carrière observes, the hygrometer and the barometer, which seldom show any marked pressure, clearly indicate this constitution of its atmosphere, whilst the topography of the locality also assists the explanation.

The various winds which prevail at Pisa, before arriving there pass over the sea, or over tracts of land more or less covered with water. The east and the north-east winds traverse the valleys of the Arno, and the lakes along the southern side of the territory of Lucca. The south-east and the south pass over the flat country around Leghorn, which furnishes abundant hygrometric resources. And lastly, the south-west and the west cross the Mediterranean before reaching Pisa. This great humidity of the climate of Pisa, imparts to it a relaxing mildness, which enervates the system, sometimes even to prostration, and so renders it altogether different from that of Rome, which is drier and warmer, notwithstanding the northerly winds cause, during the winter, violent transitions of temperature.

The excess of humidity and warm temperature of the Pisan climate, depress the vital force, induce an overwhelming lassitude, and are, in my opinion, most unfavourable elements in a climate so generally recommended for pulmonary consumption. Whatever effect the humid mildness of the air may have in diminishing excitability, and in allaying pulmonary irritation in patients of a nervous temperament, it is decidedly injurious in those of a feeble and lymphatic habit.

M. Carrière, who never advances anything against the Italian climate in relation to phthisis that he possibly can avoid, admits the climate of Pisa is by

no means so favourable for consumptive invalids as rumour and tradition would lead foreigners to suppose. He observes, that the peculiar quality of the air, however beneficial it may be in the early stage of pulmonary complaints, may even become rapidly fatal when the strength of the constitution has been undermined. Under the influence of causes constantly operating, which enervate the faculties, relax the muscular system, and depress the vital force, the decay advances rapidly, and hastens the fatal termination. It is melancholy to relate, but a great number of foreign invalids die within a few weeks after their arrival. In spite of the temporary reaction, caused by the *hope* of a speedy improvement, the climate of Pisa soon triumphs over this factitious resistance, and unerringly accomplishes its lethal work.

It might be supposed that a residence at Pisa would be likely to counteract a tendency to hæmoptysis, one of the most dangerous complications of pulmonary consumption, seeing that the climate of this place is of a sedative character, and calculated to allay irritation, either general or local. But facts show the reverse in these cases. Amongst the consumptive invalids who migrate to Pisa during the winter season, there are many who expectorate as much blood as they did during the same season in their own cold climate. And there are also others who become attacked by hæmoptysis

after their arrival at Pisa, without ever having suffered from it elsewhere. The inference from the preceding remarks is obvious, that in spite of its apparent mildness, the climate of Pisa is exciting, and that in reality its fame is greater than experience warrants.

This contradiction between results and their causes, is attempted to be explained by M. Carrière in this way : Hæmoptysis results from sanguineous congestion in the lungs; and this latter from the irritation caused by the presence of tubercles. But if an exciting atmosphere may cause pulmonary congestion and its consequences, an enervating climate assuredly may produce such relaxation of the mucous membrane as to occasion hæmoptysis. Hence it is, that patients residing at Pisa, and having a certain amount of congestion of the lungs, find themselves, in spite of every precaution, in the same position as those living in a climate that is colder, drier, and exposed to intemperature. But, he naively says, in order to counteract this complication, hæmoptysis, the invalids may have recourse to the sulphur mineral waters of the place, which serve, by their resolute and tonic action, to counterbalance the condition of weakness and relaxation of the pulmonary tissue, caused by the climate. This is certainly an easy and novel way of getting rid of such a formidable complication as that of hæmorrhage from the lungs.

M. Carrière is, however, in error. The climate of Pisa is not exciting. The causes he alleges as producing hæmoptysis are not founded in fact, and hence his conclusions are erroneous. The Pisan climate is in every way relaxing, depressing, sedative. It forms an *atmospheric* topical application, so to speak, composed of *heat and moisture*, which, acting on an engorged mucous membrane, and on softened tubercles—for few hectic invalids from these islands arrive there before the complaint has arrived at that stage—develops, instead of arresting the morbid process, and causes effusion of blood from the capillaries of the lungs, through the walls of a vomica, or of some of the large vessels, and speedily a fatal termination.

The delusion of an Italian climate, as regards the cure or prophylaxis of tubercular consumption, is in no part of that country, so delightful to persons in sound health, more clearly portrayed, than at far-famed Pisa. The stagnant life, the death-like silence, the dreary solitude of this dull town, whatever utility these elements may have in allaying the restless irritability of nervous and excitable patients, always produce serious evils upon those consumptive invalids of a melancholy turn of mind, or whose spirit is broken by hope deferred. Brooding over their melancholy condition, in a foreign land, away from the comforts of home, without the solace and cheering influence of

friends and relations, they soon break down and perish.

Every one is familiar with the happy illusion, the self-deception, which so frequently accompanies the last stage of pulmonary consumption, and constitutes, in fact, a peculiar feature of that complaint. The invalid believes himself better, and hopes he will recover, even while drawing his last breath. In those cases in which this soothing mental condition does not exist, the moral depression feeds and inflames the disease, forming a complication as melancholy as it is fatal. There are places in Italy resorted to by this class of patients, where the bustle of active life, and the moving panorama resulting therefrom, assist in cheering the mind, and in dispelling gloomy thoughts. But Pisa is not amongst the number: for, as M. Carrière admits, instead of removing gloom or melancholy, the death-like vitality of this place only feeds and engenders such feelings; and whatever advantages its climate may possess, there are conditions which necessitate that it should be avoided; or else a residence there ought to be varied by frequent excursions in the plain, or amongst the adjacent valleys.

The winter does not always present those qualities of climate required for the alleviation of pulmonary complaints. It is frequently too rainy, and the rain does not begin to cease until towards

the middle, or even the end of spring. Under such circumstances, impossible to foresee, the atmosphere of the apartment must be regulated so as to form a substitute, in some sort, for the open air, which might as well be done at home.

The environs of Pisa are rich in mineral waters, but of a different character from those in the vicinity of Rome and Naples. Instead of the abundance of sulphur contained in the volcanic springs of the latter, the mineral waters of Pisa and its neighbourhood contain little of the substance, but are impregnated chiefly with carbonaceous and alkaline matter. Some of these waters contain magnesia, soda, lime, and iron, in the form of sulphate, carbonate, and hydrochlorate: these are used only externally. The baths of Pisa, situate at the foot of Mount St. Julian, a branch of the Apennines, contain the hydrochlorates and sulphates in abundance, and are considered by the inhabitants beneficial in cases of congestion of the abdominal viscera, but not for foreigners. The chief ingredients of the neighbouring baths of Lucca, are carbonic acid, the carbonates of lime and magnesia, with the hydrochlorates of magnesia and soda.

The Val de Nievole, lying to the north of Lucca, and at the foot of the Apennines, contains several medicinal waters of considerable repute in the

neighbourhood. The principal are the thermal springs of Leopold, the Royal Bath, Tettuccio, and the Rinfresco. According to the analysis of Barzalotti, the first, which possesses a temperature of 36 degrees, contains certain quantities of carbonic acid, of oxygen, and of nitrogen, in solution, and a preponderance of the hydrochlorates of soda, chalk, and magnesia. It also contains the muriate and carbonate of iron. The other mentioned baths contain the same elements, but in a less proportion.

These waters are considered very efficacious in chronic affections of the viscera. However useful all those mineral waters, situated at the foot of the mountains of Pisa, of Lucca, and of Peschia, may be in intestinal complaints, which, by the way, are very common amongst the inhabitants, they would be more likely to do harm than good, in those cases of pulmonary disease which migrate thither as the winter approaches. M. Carrière thinks there is one exception in the saline spring of Castellaccio in Montenero, between Pisa and Leghorn, the medicinal virtue of which he attributes chiefly to the large quantity of chloride of soda it contains, and its resemblance in this respect to the waters of Bonnes, in France, the salutary influence of which, he says, is sufficiently well known. Notwithstanding this opinion, I would recommend the consumptive invalid not to place too great reliance in the imaginary

virtues of these waters, believing his hope will be only the more bitterly disappointed.

M. Carrière considers that there are other localities in the Tuscan dominions more beneficial than Pisa, as a residence for pulmonary complaints—for example, Scarlino, Gavorrano, Massa Maritima, Campiglia, and Piombino. He quotes from the statistical researches of Signor Salvagnoli, the fact, that throughout this district there is but one case of consumption in 817 cases of all diseases; but, unfortunately, this “fact” is in direct contradiction with the statistics of phthisis in every country of the globe where they have been investigated.

CHAPTER XI.

CLIMATE OF ROME.

THE approaches to Rome, either by the Florence road or that leading from Civita Vecchia, are anything but imposing. When the invalid arrives at the gates of the Eternal city, after traversing, for several hours, a wild heath, without a human habitation to be seen, the first impression is invariably a feeling of disappointment. The Porta del Popolo is but a poor entrance to Rome, and far inferior to the gloomy, desolate, ruined aspect presented by the Coliseum, approaching by the road from Naples.

The pilgrim in search of health is at once struck with the sunk and low-lying situation of the modern city, under the Pincian hill, where he is to terminate his wanderings for a time and pass the winter. Parts of the modern, or Christian city, as it is called, to distinguish it from the Rome of antiquity, are lower than the banks of the Tiber—still the "*flavus Tiberinus*,"—and during the autumn and some portion of the winter are constantly inundated. The market place in the neighbourhood of

the Pantheon, and that building itself, are often flooded, and even towards the end of October I have seen two feet of water in this open space. During the same month the road to Civita Vecchia was impassable for several days, owing to heavy rains.

This, however, was an exceptional season, for the month of October is generally the most agreeable at Rome, and invalids are recommended to arrive at that period. The soil, refreshed by the September rains, is verdant and flowery. The city has a lively aspect during the celebration of the October fêtes, and the streets are thronged with gaily-dressed citizens, proceeding to the cool cellars of Monte Testaccio, singing the popular ballad, "Viva Ottobre che spasso ci dà," and other groups dancing the *salterello* to the sound of the mandoline.

When these fêtes are over, Rome returns to her sullen solemnity; and the enervating nature of the climate, together with the mournful aspect of her vast ruins, are more calculated to depress the mind than to inspire hope.

The sanative virtues of the Roman climate are supposed to exist in its mild and sedative qualities, which implies that its air is, to a certain extent, relaxing. But this popular idea seems like one of those fanciful speculations so prevalent at a former period, when the whole theory of medicine was

sheer conjecture, handed down by tradition and received without inquiry. Why should a sedative and relaxing climate, however mild, be beneficial for a disease which is itself the result of a torpid and vitiated condition of one of the vital functions—nutrition? Even admitting that the mildness of atmosphere allays irritation of the lungs and facilitates the healing of superficial ulcers in those organs (which it cannot do), the source of the disease, the laboratory in which the tuberculous matter is formed, remains intact. Depraved digestion, malassimilation, vitiated nutrition, the morbid conditions which precede the degeneration of the blood, and the elimination and deposition of tubercles in the lungs, are fostered by the very ingredients which render this climate mild and sedative—the *malarious effluvia* and moisture which, in a greater or less degree, are never absent from Rome.

If this view be correct, it would appear that the very agent sought to allay pulmonary irritation and promote the healing of tuberculous cavities—a mild and sedative climate,—is the most certain means of engendering the elements of the disease which give rise to these secondary lesions. It appears indubitable that the popular feeling in favour of a mild and relaxing climate for pulmonary consumption is altogether wrong, being based upon erroneous data, if not upon mere tra-

dition. A cold climate, such as that of Norway or of Canada, and still air, are evidently more rational indications, if the formation of tuberculous matter is the result of a relaxed state of the vital functions, involving impaired digestion, depraved nutrition, and degeneration of the blood. Nothing is more calculated to derange the digestive organs than the sedative influence of a malarious atmosphere. Its injurious influence upon the biliary functions is well known to every physician whose practice lies in the vicinity of marshes. So that whatever good the mildness of such a climate may effect in allaying irritation in the bronchial mucous membrane, and thereby lessening the circulation, must be at the expense of the general health and of disordered nutrition.

Entertaining these views respecting phthisis, I cannot help thinking that the site of the Hospital for Consumption at Brompton was injudiciously chosen. It is surely a mistake to place consumptive invalids in a damp, low-lying locality, ill drained, badly ventilated, for the problematical advantages of its "mild climate." An elevated situation, with a free circulation of air, if sheltered from the north-east, would not have the sedative and relaxing effect upon constitutions already too relaxed, which the climate of Brompton possesses. The Hospital for Consumption at Rome is situated on the most elevated part of the city—viz., the piazza of St.

John in Laterano; and although the weather is here often intensely cold during the transitions in winter, with proper precautions injurious effects are obviated.

The prevailing winds pass over the marshy district before they arrive at Rome. The prevalent wind is the redoubtable sirocco,—which Dr. Pollock, who has resided at Rome during several winters, thus describes:—The sirocco bears on its wings often, if not always, evidence of its passage across the sandy plains of Africa, and, nearer at hand, of the malarious district which lies to the south and west of the city. It is hot, and perhaps more frequently dry than moist, but occasionally so wet as to render streets, and even staircases, slippery and damp. Under the influence of this air, appetite ceases, the tissues are relaxed, the spirit flags, a sense of lassitude and weight in the head is almost universal. He also states that the digestive powers become gradually weakened by a residence in Rome, and dyspepsia of a congestive form prevails to a remarkable extent. Appetite fails, the bowels become torpid, as if their muscular power was impaired, and purgatives which have previously been found sufficiently active, cease to have anything like the same effect. This state of things is so universal, that the writer could not recal a single instance in which it did not occur in all those who spent any time in Rome. Dr.

Pollock's experience corroborates the opinions I have expressed in the introductory remarks and in this chapter, on the effects of sedative climates upon the progress of that complaint. He regards the southern climate, and especially that portion of it most suitable to the numerous class of chest affections which derive benefit from sedative air, as prejudicial to the nutritive function, upon the integrity of which depend most of the reparative efforts of nature.*

Although the south-west is the prevailing wind, the northerly winds are not unusual. They occur frequently during winter and spring, and always come suddenly, without any period of transition, and sometimes so intensely cold as to cause a variation of temperature between one street and another, of twenty degrees. The Count de Tournon, who has made extensive and accurate observations on this climate, observes:—The province of which Rome is the centre, bounded by the sea on the south-west, and on the north-east by a chain of mountains, is exposed at the same time to the south winds and those of the north, rendered cold by their passage over the Apennines and the mountains of Rodicofani; therefore cold and heat are felt in intense degrees, and succeed one another without transition. On the other side, the vicinity of the sea, the extent of lakes and marshes, and

* *Medical Gazette*, December, 1850.

the situation of the mountains, maintain humidity, because the clouds which rise from the damp parts, driven back by these mountains, dissolve the rain on the plain ; therefore frequent variations in the state of the atmosphere, and humidity, are the principal features of the climate. I would hardly advise those who suffer from affections of the chest to pass a winter in Rome, as I fear they would too often suffer from the inconvenience of a cold latitude, without being able to meet with suitable preservatives against cold and damp.

The accuracy of the preceding remarks is evident to any person who has resided in the city they refer to. It is generally supposed that the winter at Rome is shorter than in England ; and this circumstance is often advanced as one of the chief advantages of the Roman climate. The winter is certainly sometimes shorter and milder than in this country, but not always so ; and none can foretel whether any given winter will be mild or severe, so that, after all, the climate is uncertain. For example, on the 16th of March, 1851, snow fell in the streets of Rome, and the cold was even as severe as the proverbial March wind of London.

The *Giornale di Roma*, of the 20th of the same month, says, that after six days of uninterrupted cold weather, the thermometer fell to 1·3 Reaumur below Zero (2·9 Fahrenheit). On the 20th a heavy fall of snow occurred, with which the ground was

covered for some hours. We have already seen, in the chapter on Central Lombardy, that in the middle of May of the preceding year (1850), "the weather was still cold and disagreeable, and the humbug of an Italian climate," as designated by Mr. Honan, "applies as much to the spring at Rome as to the winter at Verona."

A consumptive invalid and a keen observer, who had made the tour of Europe in search of the fabulous climate supposed to exist in some favoured country in the south, but which he never could find, thus writes from Rome, where he had spent a winter:—The more I see of Italy, the more I doubt whether it be worth while for an invalid to encounter the fatigues of so long a journey for the sake of any advantages to be found in it, in respect of climate, during the winter. To come to Italy with the hope of *escaping* the winter, is a grievous mistake. This might be done by alternately changing your hemisphere, but in Europe it is impossible: and I believe that Devonshire, after all, may be the best place for an invalid during that season. If the thermometer be not so low here, the temperature is more variable, and the winds are more bitter and cutting. In Devonshire, too, all the comforts of the country are directed against cold; here all the precautions are the other way.

The streets are built to exclude, as much as

possible, the rays of the sun, and are now as damp and cold as rain and frost can make them. And then, what a difference between the warm carpet, the snug elbowed chair, and the blazing coal fire of an English winter evening, and the stone staircases, marble floors, and starving casements of an Italian house !

The only advantage of Italy, then, is, that your penance is *shorter* than it would be in England ; for I repeat that, during the time it lasts, winter is more severely felt here than at Sidmouth, where I would even recommend an Italian invalid to repair from November till February, if he could possess himself of Fortunatus's cap, to remove the difficulties of the journey.

There is, however, a climate in Rome which possesses the rare qualities of mildness and equality—I allude to the “climate of St. Peter’s.” The cause of this remarkable peculiarity has been attributed to the thickness of the walls of the basilic; and it is so wholly free from damp, that the air within is not affected by that without ; so that, like a well-built cellar, it enjoys an equability of temperature all the year round. No other church or public building in Rome possesses this rare advantage; on the contrary, the atmosphere of the Roman churches, galleries, and palaces, is notoriously cold, damp, and highly injurious to health. Every stranger who has passed a winter in

Rome will remember what a luxury it was to breathe the mild and genial air in the interior of St. Peter's, after starving in the cold and comfortless galleries of the Vatican; such a gallery, for example, as the Hall of Animals, which is an ice-house in temperature, and hence destructive to consumptive persons. St. Peter's is the favourite resort of invalids in the modern city, where they meet and promenade when the weather is unfavourable for exercise out of doors.

The places of attraction in the ancient capital—the *Roma Antiqua*—are of a different character. With the exception of the Capitol and its cabinet of antique gems, including the “Dying Gladiator” and the beautiful statue of Antinous, which rivals the Apollo, the attractions of this quarter consist entirely of mouldering ruins, broken and prostrate columns, fragments of temples, garnished with wild and rank vegetation—in a word, a desert, filled with ruins, is the daily haunt of every foreigner capable of moving about, when the weather is fine. From the Capitol to the Coliseum, which is the centre of this field of desolation, there is but a few minutes' walk, and partly along the *via sacra*, reminding visitors of Horace and his trifling reveries:

Ibam forte Via Sacra, sicut meus est mos,
Nescio quid meditans nugarum, et totus in illis.

The Forum also intervenes, certainly the most classic spot on earth, with the ruins of the Temple of Concord, in which Cicero assembled the senate during Catiline's conspiracy, and the three graceful columns of Jupiter's temple, erected by Augustus, but now only forming a splendid wreck, interesting mainly from its various associations.

Amongst all these ruins the Coliseum is by far the chief attraction for strangers, and the focus of malaria, in a very insalubrious district. This gigantic ruin appears lower than the surrounding level, in consequence of the accumulation of other wrecks, or debris, raising the soil around ; hence it favours the collection of stagnant pools of water, so that in the finest weather there prevails a cold damp smell in the interior of the building. The rank and luxuriant grass, weeds, and wild flowers, the Flora of the Coliseum, which grow in profusion all over the amphitheatre, and the moist and stagnant air of the place, combine in forming a noxious atmosphere, the evil effects of which are soon experienced by strangers, whether invalid or robust, who pass any time there. I have repeatedly observed invalids wandering about this vast ruin for hours, and with the aid of a guide climbing over the different stages of the mouldering walls, to catch the effect produced by the variety of views, which are renewed at each arcade. At night, and by moonlight, is the favourite time for

visiting the Coliseum, in order to see the effect of light and shade, with the endless details of ruins thus shown. No consumptive patient, who is able to drive to the spot, and to crawl over the walls, ever omits such moonlight visits! One might suppose that an individual in bad health would choose a more cheerful scene,—at least, one less significant of his own condition; but it may be, perhaps, that ruins console each other.

The Seven Hills of ancient Rome are now of such little elevation, that some are not easily discerned; and the deep narrow valleys which formerly separated them, are in a great measure filled up by crumbled walls and rubbish. The valley between the Cœlian and Palatine Hills is scarcely wider than an ordinary street, and the triumphal arch of Constantine almost fills its entire width. The eastern extremity of the Cœlian, and the western aspect of the Esquiline, are only separated by the Coliseum; and the immediate boundaries of the Forum comprise the Cœlian, the Esquiline, part of the Viminal, the Palatine, and the Capitoline hills. All this quarter being depopulated, is malarious; and however classic it may be, proves most dangerous to health.

That part of the modern city which is built along the valley of the Tiber, and occupies the ancient Campus Martius, is exposed to humidity

during certain seasons. The Tiber, in its course through this valley, forms a considerable bend, or semicircle, the concavity of which corresponds to the line of the Pincian and Quirinal hills, and embraces a considerable extent of surface. Hence, during the inundations which frequently take place, the water issuing from both ends of the semicircle, soon unite, and cover a third part of the city. This water does not readily subside; and in some parts—as, for example, around the Temple of Vesta, where the ground is sunk—it may continue for weeks together, exposed to the influence of the sun and atmosphere. The Piazza del Popolo, the chief entrance to the modern city, is a reclaimed swamp.

M. Carrière takes a favourable view of the Roman climate, although he agrees with the Count de Tournon, that variability of the atmosphere, and a certain amount of humidity, varying with the winds and seasons, form its chief characteristics. With such admissions, it is difficult to understand how this climate can be ever salubrious. For my own part, I believe the facts cited by M. Carrière in favour of his views will prove a directly opposite conclusion; that, in short, the climate of Rome is not at all adapted for consumptive patients. The following summary will show how far M. Carrière's favourable opinion of the Roman climate is borne out by facts.

Rome being exposed on the north-east and on the south-west, in a line with the course of the Tiber, it is under the double influence of cold and dry winds coming from the Apennines and neighbouring mountains, and of warm, humid winds passing over the Alban district and that part of the Campagna which skirts the sea. The surrounding country being more open and free towards the south-west than in the opposite direction, the warm winds preponderate. Besides, the transverse hills form but an insufficient barrier; for the valley of the Tiber, which is freely open between the Capitoline and the Janiculum, enables the southerly winds to enter the city without losing much of their peculiar properties. This direct opposition between the points of the horizon whence the prevailing winds arrive, explains the sudden transitions in the anemological conditions of the atmosphere. These transitions occur mostly in the morning and evening. During the day, when the sun shines, the influence of the warm winds prevails. Astronomical observations extending over a period of nearly sixty years warrant this remark.

From 1782 to 1840, the north and northerly winds generally prevailed morning and evening, and in the wet season, even during the entire day. Throughout the fine season, if the mornings were rendered cool under the influence of the north winds, the remainder of the day and part of the

night were warmed by the southerly winds; to which should be added the west wind, blowing regularly like a sea breeze, and modifying the temperature.* Notwithstanding the regularity of this distribution of the winds during the year, the cold do not usually preponderate over the warm winds: for according to Calandrelli, the south-east, the south, the south-west, and the west—all warm and temperate winds—give a proportion of 62 in 100. The astronomical tables give the same difference, taking a mean upon a certain number of years. The following results demonstrate that this law of preponderance of the warm winds is far from being always borne out. The proportion for 1842 gives 284 north to 132 south; for 1841, 207 north to 224 south; in 1840, during which the north wind prevailed through autumn and to the beginning of spring, there were 222 north and 87 west, south-west, and south; lastly, in 1839 and 1838, the southerly winds preponderated, the calculations giving 221 south to 177 north, and 293 south for 179 north.

According to the researches of Calandrelli, the winds succeed each other in the following order, in point of frequency: the African wind, or south-west, which arrives by Albano, Arde, and partly by the sea, prevails over the others; next comes the south wind, which meets with trifling obstacles in

* *Annali del' Osservatorio Astronomico*, vol. i.

its path ; then the north-north-east, which enters the Roman Campagna along the valley of the river in the first part of its course ; and lastly, the south-east, the redoubtable sirocco. The north-west, the mistral of Provence and the pestiferous blast of the Gulf of Naples produce little effect at Rome. With regard to the hygrometric constitution of each wind, this is more marked in the southerly than in the antagonistic winds, as the topography would indicate. Calandrelli states that the east, the south-east, and the south are principally the rainy winds.

The preponderance of humid winds over dry naturally imparts to the Roman climate a marked hygrometric condition. The topographical peculiarities, the periodical inundation of the Tiber, and the actual condition of the Campagna, all contribute to establish this state of atmosphere.

The hygrometer rarely marks absolute dryness at Rome. During the various seasons, it indicates considerable moisture. According to Schouw, the mean quantity of rain ranges about 800 millimetres, (29i. 06). That of the rainy days is 114, the minimum being 56, in the year 1828, and the maximum 158, in 1784, in a series of 39 years. The days classed amongst the serene (that is, days in which, although the sun shines, the sky is not free from clouds) are very numerous, even in the worst years. For example, in 1784, when rain fell in consider-

able quantity through all the seasons, there were 58 serene and 93 gloomy days; but in 1828, the figures were reversed, the fine days being 84, and only 45 unfavourable ones. The Roman atmosphere does not possess the vivid transparency of that of Naples, or of the Calabrian shore. It gives more of a softened and subdued light, owing, perhaps, to its humidity, and M. Berard is not borne out by facts when he states that foreigners are so dazzled on their first arrival by the intensity of the light, that it causes violent contractions of the eyelids and pupils.

The temperature is influenced by the nature of the soil, the mountains forming a semi-circular belt in the neighbourhood of the city, and those parts, where the plain is open, correspond to the west, the south-west, and the south; that is to say, the points of the horizon whence the warm and humid winds enter the valley in which Rome is situated. The heat is excessive when unchecked by the antagonism of the northerly winds, and may be compared to that of the climates of Naples and Calabria, Rome being placed in the same isothermal zone with those regions.

The reader will be enabled to judge how far the following additional facts and figures corroborate M. Carrière's favourable views as to the sanative influence of the Roman climate in cases of phthisis. Mahlmann's tables give for the annual mean tem-

perature on 20 years' observation, 15·4; Schouw says, 15·46; and, according to the latter, the means of the seasons are, for winter 8·01; for spring, 14·29; for summer, 22·91; for autumn, 16·49, also results of 20 years' observation; the maxima and minima temperatures being 38 for the former, and 5·9 for the latter, that is to say, the oscillations extend along a scale of nearly 44 degrees; hence extreme heat and extreme cold are characteristics of the Roman climate. Indeed, the departure of winter and the advent of spring are as anxiously looked for by the modern Roman as they were when Horace wrote:—

“*Solvitur acris hiems gratâ vice veris et Favoni.*”

Few years pass over without the summit of Mount Soracte, not a great distance from Rome, being covered with snow, and M. de Tournon says that, during the winter of 1812-13, which, however, was an exceptional year, the lake of the villa Borghése was frozen over, and the ice was strong enough to support skaters for several days. However, the annual mean of the fall of snow is something more than one day (1·6), and the absolute maximum in a period of 39 years was 5 days.

M. Carrière still contends that, in spite of this double condition of intense heat and bitter cold, during a certain number of days in summer and in winter, extreme dryness is as rare as extreme hu-

midity in this climate, and that Rome is sufficiently far removed from the sea to prevent its atmosphere from being saturated with watery vapour, like that of Naples, for instance, where the humidity is so great in the evenings that it even penetrates the clothing. The influence of the cold wind, notwithstanding the extent of the oscillations of the barometer (34 millimetres, 30) is not, he says, sufficiently powerful to exclude the peculiar element of mildness of the climate, namely, the intrinsic dampness of the atmosphere.

This characteristic feature is, in my opinion, injurious instead of being beneficial; an element of evil, in place of the reverse, in the constitution of any climate to which consumptive invalids are consigned. And the moisture arising from the sea, which he deprecates, is, generally speaking, assuredly more salubrious than that resulting from the emanations of marshes, or of inundations undergoing the process of evaporation. This *inland* moisture is always malarious in Italy, and is more calculated to relax the system, depress the vital powers, vitiate the process of digestion and nutrition, than to impart renewed vitality to constitutions already broken down by general or local disease.

There is also another important condition of the atmosphere which profoundly affects the climate, according to circumstances and seasons. The

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northerly winds, which are cold and comparatively dry, have free access to the valley of the Tiber, and also to the city, and are frequently struggling against the warm, humid winds of the south. They sometimes gain the ascendancy over these winds and retain it throughout the year. This struggle between the winds generally takes place during winter, but occasionally in the spring, and is accompanied by violent transitions. It soon alters the character of the climate most materially.

The temperature is not the only element affected; for the depression of the thermometer is accompanied by a corresponding movement in the hygrometer, and the atmosphere is deprived of its humidity as well as of heat. Yet M. Carrière, who admits this atmospherical condition occurs quite often enough to enable all writers from the time of Lancisi, and even from remoter periods, to describe the Roman weather as "inconstant," nevertheless defends the climate, and says, that it does not produce such striking physiological effects as one might suppose. That, in spite of the undoubted depression of the hygrometer, the peculiar mildness of the air does not entirely disappear; that the impression, however faint it may be, still exists, and is experienced, even in the severest winter, by persons coming from more northern countries.

The peculiar mildness described is still too faint to counteract the evil effects upon phthisical pa-

tients of sudden and violent transitions. The vicissitudes referred to occur especially during the early weeks of winter, when the northerly winds prevail over those from the south, the previously serene sky becomes cloudy and overcast, and sunshine is replaced by rain. This atmospheric condition continues during the period of the winter rains. After December, when the humidity falls from a high to a low figure, according to the succession of the different winds, the northern atmospheric influences prevail. The cold and dry winds blow with a certain degree of continuousness for several days, when they yield to the antagonistic collateral winds. The beginning of February resembles January, and when the former approaches its termination, several relapses to winter weather occur, becoming gradually warm, less frequent as spring draws nearer, and this season generally commences in the month of April at Rome, although, as already stated, in May, 1850, the weather was still bleak and cold.

The mean temperature of spring approaches nearer to that of winter than of summer. The month of May generally ushers in the warm season, and the heat sometimes becomes as great as in June. During the months of June and July the process of evaporation is in full force, and the meteorological conditions of the atmosphere are alternately characterized by dryness and trans-

parency, and by the dispersion of the mass of vapour conveyed to the city by the south-west winds, or raised by solar action, as also by violent electric storms.

This constitutes the unhealthy season at Rome, when the malarious influences are most intense, and it continues to the month of September, occasionally even so late as October—that period when a sort of second spring usually commences, so dear to the Romans. December is characterized, from its commencement, by alternations of copious falls of rain and bitter cold, imparting to the climate the northerly atmospheric influences of January.

The most unhealthy parts of Rome are comprised between Saint John in Laterano, the Forum, the ancient Velabrum, and the banks of the Tiber, always damp and filthy; and in the modern city, the Trastevere, extending from the southern extremity of the Janiculum to St. Peter's and the Vatican. When the warm season commences, these districts are deserted by all the inhabitants not compelled by poverty to remain. Besides the intermittent fever which occurs periodically at Rome, nervous affections and sanguineous congestions, such as apoplexy, &c., are very prevalent.*

* I have seen some cases of a very inveterate form of Porriigo at Rome, and was informed that it was one of the most common skin complaints amongst the lower classes. Wherever there is bad air, poverty, squalor, and filth,

M. Carrière says that these congestions are caused by the humid heat of the atmosphere, relaxing the tissues and diminishing their powers of resistance to the expanding force of the circulation. He also observes, dry heat may undoubtedly produce similar unhealthy conditions, but they are more especially the result of the influence of humidity and heat, complicated with those sudden transitions to which the Roman climate is so peculiarly liable.

This is perfectly correct, and seems, in my opinion, one of the principal reasons why the climate of Rome is not adapted for consumptive invalids. The same cause which produces general sanguineous congestion will also occasion congestion of the pulmonary mucous membrane, and finally spitting of blood, independently of its injurious effect on the digestive organs.

This moist air, he says, is so constituted that its humidity rarely becomes too great, and the temperature is not liable to sudden variations, except at certain periods which may be foreseen, on account of the regularity (?) of their recurrence; this humid air, he repeats, causes, as an immediate effect, the diminution of the pulmonary irritation, but only in the commencement of the disease, or during its first stage. In the later stages, especially when the

this disease of misery is generally found; and these elements are not wanting in certain localities along the banks of the Tiber.

wasting and loss of strength have made much progress, it will tend to aid the general break up of the system, to destroy whatever strength remains with deplorable rapidity, and also, in the latter case, to encourage hæmoptysis. M. Carrière coincides with the opinion of Sir James Clark, that the climate of Rome is only suitable for consumptive patients in the first stage of the complaint. My own opinion is opposed to both those writers; for I believe that the Roman climate is not adapted for pulmonary consumption in any stage or form whatever. The basis on which this view is formed is fully developed in the preceding pages.

When the heat is too great in Rome, invalids often resort to the heights of Albano, a few miles distant, a delightful summer residence; they also go to Frascati, the ancient Tusculum, and to Palestrina, the Tibur of the Roman emperors, where Macenas, Horace, and Catullus had their suburban villas.

CHAPTER XII.

Southern Italy.

CLIMATE OF NAPLES.

THE road leading from Rome to Naples passes through the Pontine Marshes, for a distance of twenty-five miles

Although the livid aspect of the inhabitants of this locality shows clearly enough the baneful effects resulting from a continued residence there, travellers merely passing through have seldom any thing to fear. A lady of Terracina, Signora Elisabetta Fiorini, was zealously occupied on the Flora of the Pontine Marshes, for a considerable time, without experiencing any particular inconvenience, and succeeded in forming a valuable collection of plants from this malarious region. The drive through the marshes is, however, dismal and dreary; but the traveller is amply compensated on his arrival at Terracina, the ancient Anxur, the situation of which is strikingly beautiful, being situated at the foot of the Apennines, and on the Mediterranean shore.

The climate and scenery now assume quite a

different character to that which they present in any other part of Italy previously described. The richness and luxuriance of the country between Terracina and Naples are exceedingly striking. Hedges of laurustinus, olives, and vineyards; orange and lemon groves covered with fruit; myrtle, fig, and palm trees, give a new and soft character to the landscape. But, however brilliant the skies and luxuriant the vegetation, advancing from Rome by Capua through the territory of Naples, and of Calabria, to the promontory of Leucadia, the climate of these parts proves treacherous, injurious in all diseases of the respiratory organs, and fatal in pulmonary consumption.

Naples, perhaps, affords the worst climate in Europe for complaints of the chest, and the winter is much colder there than at Rome, notwithstanding its latitude. With a hot sun there may prevail a winter of the most piercing bitterness. A consumptive invalid had better avoid Naples, unless he wishes to illustrate the common proverb, "*Vedi Napolie po' mori.*" Well might Eustace remark, "if a man is tired of the slow lingering progress of consumption, let him repair to Naples, and the *dénouement* will be much more rapid." Apart from the question of salubrity, however, there is everything to gratify the senses throughout the whole of the Neapolitan territory—the scenery, the classic watering-places along the Tyrrhenian coast,

the disintombed ruins of Pompeii and Herculaneum, the habits of the people, will not fail to excite the interest of the stranger.

Although the climate of Naples is admitted by all authors to be injurious in cases of pulmonary consumption, still there are several localities in this region of Italy considered by some writers beneficial as a residence for hectic invalids. Pozzuoli and Baiæ—the “delightful Baiæ” of the ancient Romans—for example, Mola di Gaeta, besides Messina and Palermo in Sicily. The only class of invalids for whom a residence at Naples would not be injurious, consists of persons subject to melancholy, lowness of spirits, and other affections resulting from moral causes, and those afflicted with partial paralysis. Even those cases are, however, liable to be attacked by cerebral congestion, if not carefully attended to, from the peculiarities of the climate.

The topography of Naples is peculiar, and in no way corresponds to that of any other large city in the Italian peninsula. The character of the climate is materially influenced by this cause. Naples is situate near the centre of the semicircle formed by the gulf, and presents the form of a triangle—the base extending along the shore, and the apex receding towards Capo di Monte. It is exposed to the influence of the various winds blowing from the sea as well as those from the opposite direction; for

although the city appears to be covered by mountains in the back ground, the latter, which are all volcanic, are not of sufficient elevation to protect it, or else are broken or interrupted in several places where the winds enter. Pausilippo, which extends to Capo di Monte in a succession of pretty high ridges, is perhaps the most effective part of the barrier. From Capo di Monte to Vesuvius, the height of the mountains diminishes, and intervals occur between their apices. In short, it is only by Vesuvius and its vicinity that any part of the basin in which Naples lies is at all effectually protected.

Even M. Carrière's enthusiasm is not proof against the effects of the winds and rains of Naples, of which he had unpleasant personal experience; and with all his partiality for the Italian climate generally, he bears correct testimony as to the real character of this region. He describes the baneful influence of the various winds with graphic accuracy, in the following manner: The gulf being exposed towards the south-west and west, the winds blowing from these quarters reach the quays of Naples without meeting any obstacle to impede their course. Having arrived at this part of the city, they often meet the opposite winds which had crossed the broken mountain barrier and penetrated into the heart of the town—hence it is obvious that the atmosphere must be subject to

frequent vicissitudes, seeing that it is so imperfectly protected from the various disturbing influences of the elements; and that this is really the case will be seen from the following details: The two shores of the gulf, between which the city lies, are exposed to different influences—that which corresponds to the mountain quarter of this neighbourhood faces the west-north-west point of the horizon; the other, the south-west more especially.

The libeccio blows direct upon the latter. The boisterous mistral, the plague of the northern extremity of the Italian peninsula, arrives by the northern shore of the gulf, and in doubling Pausilippo rushes impetuously along the Margillina quay, and sweeps the whole of that locality to the Santa Lucia quay, where it expends its fury. The long ridge or crest of Pausilippo, extending from the shore to Capo di Monte, is a sufficient protection against the due north wind. The north-east finds a free passage between Capo di Monte and Capo di Chino; the east wind is interrupted by the Somma; the south-east and the south approach along the maritime edge of Vesuvius or by the gulf, after passing over the mountains of Castellamare and Sorrentum; and lastly, the south-west and the west winds have free access to the city by the open sea.

It appears, from this description, that the east

the south-east, and the north are the least frequent, while the most common are those that blow from the sea or along the shores of the gulf, where there is nothing to impede their course or moderate their intensity. The following scale, drawn up by M. Carrière from the researches of Renzi, will show the proportional influence of the various winds. The south-west, or libeccio, which is so prevalent in the Neapolitan climate, is represented by the numeral 5 during the course of the annual vicissitudes; the south wind by 3, the north $2\frac{1}{2}$, the north-west $2\frac{1}{4}$, the west 2, the north-east $1\frac{3}{4}$, the south-east $1\frac{1}{2}$, the east 1. The relations of the northern influences to those from the opposite point of the horizon are, according to this scale, in the proportion of 6 to 9.

The great prevalence of the southerly winds, all of which traverse a watery course before arriving at Naples, indicates considerable moisture or humidity in the climate; they occur chiefly during the spring and summer months. The west ought to be included amongst those winds which dispel the last traces of winter cold and temper the intense heat of summer; and in spite of their relative predominance, the influence of the etesian north, which contributes so much to the serenity and transparency of the atmosphere in summer, and exercises so considerable an influence on this climate, should not be forgotten. The southerly

winds continue through autumn and until the beginning of winter, when the struggle commences between them and the antagonistic winds, causing a fall of rain and great atmospheric disturbance.

The greatest quantity of rain falls during the months of October and November. December, in which the northern influences are keenly felt, is comparatively speaking not very rainy, and January still less so. June, July, and August are the driest months of the year. This dryness of summer seems mainly due to the regular prevalence of the etesian winds. The annual quantity of rain is stated differently by writers; Gasparin calculates a mean of 804 millimetres; Cevasco estimates it 950 millimetres, and Renzi gives, as the result of twenty years' observation, a mean of 750 millimetres. It frequently falls in torrents, but is more violent and less penetrating in summer than in autumn, when the showers are more gentle and continuous.

From the preceding details, the fact appears evident that Naples is subject to great vicissitudes in consequence of its peculiar situation, and especially on account of the topographical configuration of the gulf, which admits the northerly winds to enter in violent antagonism with those blowing from the opposite hemisphere. The hygrometer and barometer testify, by their marked variations, to the accuracy of this statement. The former

indicates every degree of atmospherical visicular saturation, by running the entire length of the scale in the short period of a single day. The second shows annually, in its variations, a range of more than 40 millimetres, whilst at Rome it is considerably within that limit. These capricious alternations in the weather, which are amongst the principal characteristics of the climate of Naples, will certainly surprise those who are only acquainted with the poetic descriptions so often quoted of this land of "perpetual sunshine."

The *ostro* and the *sirocco*, the south and south-west winds of somewhat similar characters, not only saturate one's clothes with warm invisible vapour, but prostrate the muscular force and paralyze the mind. The *maëstro*, or the north-west wind, is an impetuous icy blast, which imparts to the Neapolitan climate, while it continues, the characteristic influence of a northern region. It is seldom dry, on account of its passage over the sea, and the cold it conveys is rendered raw and bitter by its humidity. This wind exercises a pernicious influence upon the cutaneous surface and also causes serious internal disorder.

M. Carrière, however, thinks that all these unfavourable effects are in a measure modified by the well-marked temperature of the Campagna and of the city of Naples. He gives the annual mean of the city, estimated from two series of observations

of eighteen and of eight years respectively, as 16·5; the annual mean of the adjoining places being about 15·9. The winter mean of Naples is 9·8; that of spring 15·2; of summer 23·8; of autumn 16·8, or even 17. However, if the temperature modifies the physiological effects of the winds, the latter moderate or neutralize the influence of the temperature, and according to the manner in which these atmospheric vicissitudes prevail, they change completely the climate between morning and evening, from keen dry cold to a humid warmth, or the reverse. The maxima of the temperature of Naples is 38·7, or 3-10ths more than that of Paris; the minima temperature is five degrees below zero, R. Hail and snow are of frequent occurrence during winter, and even Vesuvius is sometimes covered with the latter for an entire day, in spite of the Neapolitan sky and climate.

One of the most prominent characteristics of the Neapolitan weather is the powerful exciting influence it has upon the nervous system—however pure and apparently salubrious, in a general point of view, it is capricious and highly exciting. M. Carrière considers the climate of Naples in two distinct aspects; in fact, he divides it into two secondary climates—one corresponding to the northern portion of the city, where the north-west wind blows freely; the other to the south and east, which are exposed to the southerly winds. The

former embraces the magnificent range of quays extending from Pausilippo to Chiatamara, and the gardens of the Villa Reale, which latter protects the locality of the Chiaja from the violent and boisterous libeccio.

But when the north-west wind, the Mistral of Italy, escapes round the promontory that separates Naples from Pozzuoli and Baiæ, it sweeps along the entire locality with enormous force, agitates the sea violently, and rushes impetuously along the magnificent street which skirts the quay. It is singular, that while this boisterous wind is playing in full force in the above-named locality, the atmosphere of the interior of the city is comparatively calm. The mistral of Italy is generally charged with humidity, and is so far different from that of Provence, which is dry. Although autumn and winter are the seasons during which it most prevails, the other periods of the year are by no means exempt from occasional visits. During a sojourn of three months at Naples, including the months of November, December, and January, M. Carrière felt the influence of this wind, as nearly as possible, every fourth day. It prevailed most frequently in the morning, and when occurring in the evening, it was charged with a glacial humidity, that would make strangers wince, although of the strongest constitution. This baneful wind suddenly suppresses the transpiration, causes acute pectoral

affections, with disorder of the circulatory and nervous systems. The part of the city where its influence is most severely felt, has been aptly described by Dr. Chevalley de Rivas as "the Siberia of Naples."* Nevertheless, the locality of the mistral forms the fashionable part of the city, where tourists and foreigners generally reside. Persons of robust constitution may certainly escape with impunity; but invalids, especially those suffering from pulmonary complaints, who rashly take up their quarters in this part, will soon be compelled to fly from the effects of this lethal blast.

Having thus sketched the character of the climate peculiar to the northern division of the city, a few remarks will suffice respecting the nature of that of the east and southerly districts. This part of Naples presents quite a different aspect to that just described. It is much more extensive, and more populous than the former, and its centre forms a focus of insalubrity. The unhealthy influence extends beyond the city walls into the open plain, which is composed of volcanic detritus and vegetable humus. Here are situate the *Paludi*, the great source of intermittent fever. The lugubrious name of Santa Maria del Pianto,

* This physician has written an excellent account of the thermo-mineral waters of the Island of Ischia, entitled, *Descrizione delle Acque Termo-Minerali e delle Stufe dell' Isola d' Ischia*.

given to a small hill in their centre, would seem to indicate the true character of this locality.

M. Carrière states that the air of this quarter is less oxygenated than that of the northern division; that the atmospheric vicissitudes are less violent and abrupt, and the type of disease indigenous to this district is essentially chronic. It is almost exempt from the intensely-acute form of disease, so frequent in the Chiaja quarter of the city. As a place of residence for invalids, this writer recommends the open, airy streets situated between the upper end of the Toledo and the Capo di Chino, where the southerly winds are modified, and the north-east, which is a cool and healthy wind in this quarter, refreshes the air. The temperature is moderate, the variations less violent and frequent than in any other part. But even this part of the city is not suited as a residence for consumptive invalids; for the vicissitudes are frequent and extensive during spring and winter. In short, the only complaints for which the climate of Naples is at all adapted, are certain forms of mental disease, of a melancholy type, which may be relieved by the numerous objects and places of attraction in the city and neighbourhood, the novelty of the scene, and the liveliness of the mercurial inhabitants. For persons in good health there is not in Italy a more delightful residence than Naples. Its brilliant skies, luxuriant vegetation, and, during the fine season,

transparent atmosphere, are pleasing to the senses, and, carried away with this impression, tourists and visitors often write glowing descriptions of the climate. I have already pointed out the fallacy of such conclusions as regards salubrity, and my views are fully corroborated by the following passage from an interesting memoir recently published, on the "Health of London," by Dr. Webster :—

"An agreeable climate is not always the most salubrious, although the animal feelings are certainly often thereby more gratified than in countries where the atmospheric impressions seem of a different description; whilst good health and longevity are more frequent in the latter than in the former. Take the south of France or even Italy, so much esteemed as salutary retreats for invalids. Having visited both these regions, and made inquiry among the inhabitants, into their greatly over-lauded climates, I soon satisfied myself that the views commonly entertained, were founded on exaggerated reports. The conclusion I came to was adopted after much personal communication with the medical practitioners of many parts of Italy, and after attendance in various Italian hospitals and visits to the cemeteries, where foreigners, but English chiefly, were laid in their lonely graves. It is indeed sad to think how many of our countrymen, who cross the Alps in search of health, in place of it find only a tomb in the reputed Elysium of

Italy. The climate, especially of the southern districts, is no doubt delightful; and visitors, if in health, enjoy its balmy breezes, splendid sky, and exhilarating atmosphere; at the same time that surrounding nature seems, in many places, like an earthly paradise. Nevertheless, diseases are here quite as serious as elsewhere, are generally more rapid in their course, and often equally uncontrollable by treatment; whilst the average limit of human life is, by no means, prolonged to the same term of years, which we so frequently meet with in the more northern and bleaker countries of Europe. Animal life seems far more rapid in the Italian peninsula, and the physical frame becomes quicker developed; but it decays sooner than in England, where longevity is much oftener observed amongst the inhabitants than in the former country."

Baïæ and Pozzuoli are strongly recommended by M. Carrière as a winter residence for phthisical invalids sojourning in the Neapolitan territory. The climates of both these places of classic renown, are mild, that is, humid, warm, and less subject to the influence of violent winds than any place in the Campagna. The decrepit, shrivelled, and bent appearance of the wretched inhabitants along the shore at Baïæ, with the undrained swamps in the neighbourhood, are evident proofs against the salubrity of this place. But Pozzuoli is considered,

by the same writer, to be free from any obnoxious influences; and he is surprised that a climate so mild, milder, indeed, this writer says, than that of any other winter station throughout Italy, should have been hitherto overlooked. Renzi, a recent authority, mentions its beneficial influence in phthisis thus: "Consumption is specially benefited by this climate. It calms and assuages that complaint in a surprising manner, especially when it is complicated with considerable irritation of the mucous membrane of the air passages and digestive organs. Farther, he attributes the virtues of the climate to a kind of combination of volcanic sulphur vapour with the mild atmosphere, which has a balsamic influence in diseases of the mucous membrane." M. Carrière goes even further than Renzi, seeing he states—"Le climat de Pozzuoli pouvant modifier favorablement les symptômes de la phthisie et même les faire disparaître."

But when physicians know there is one death from consumption in a mortality of $2\frac{1}{3}$ throughout the neighbouring city of Naples, while but one fatal case occurs from that disease in the hospitals of Paris, in a mortality of $3\frac{1}{4}$, in which city phthisis is notoriously prevalent, I think the assertions of both those writers require further confirmation in regard to the alleged specific virtues of the climate of Pozzuoli in pulmonary consumption.

CHAPTER XIII.

CONCLUSION.

IT results from the preceding statements, that much misconception prevails with respect to the efficacy of foreign climates in cases of pulmonary consumption ; and however agreeable to the senses warm air, sunny skies, and luxuriant vegetation, may seem, they afford no proof of salubrity, nor of the beneficial effect of any climate.

Madeira, with all its sanatory fame, is no exception to this rule, as the meteorological observations of Drs. Heineken, Gourlay, and Mason, incontestably establish. Malta is subject to great vicissitudes of temperature, and to the baneful effects of the Sirocco and Libeccio—African blasts. The climate of the south of France is rendered most injurious to consumptive invalids by the influence of the Mistral, the scourge of Provence. The mortality from consumption, amongst the natives, shows this. Nice, which exhibits the luxuriant vegetation of the tropics, is subject to great alternations from heat to cold, and the deaths by phthisis are numerous even amongst the inhabitants.

The climate of Italy, however delightful to

persons in good health, affords no immunity from pulmonary disease. It has been vastly overrated, especially as an adjuvant in the cure of phthisis; and the localities generally recommended are not the most favourable. For example: Northern Italy, which has been hitherto overlooked by the profession, affords, in my opinion, two of the best localities for the residence of pulmonary invalids throughout the Italian peninsula—namely, Como and Venice.

Invalids residing in Italy will find the summer climate of Lake Como the best adapted for pectoral affections. The transitions of temperature are more gentle here than at any other station in Italy, and its climate approaches nearer to equability than elsewhere. Venice presents peculiar advantages. The climate of this singular city is in great measure exempt from those violent atmospheric perturbations which are the bane of the Neapolitan sea board; whilst it possesses a certain mildness of character and equability, often unknown in some of the more southern parts of Italy. Besides, the gondola exercise, the gliding motion and gentle oscillation of which are so peculiarly adapted for consumptive invalids.

Genoa is admitted by all writers to be one of the most unfavourable localities in Italy for pulmonary complaints. Florence is equally prejudicial. The climate of Pisa is far too relaxing, humid, and

murky, to be beneficial in tuberculous disease. The Roman climate, if mild, is sedative and depressing; and, owing its mildness to malarious emanations, cannot prove sanative, particularly in a malady characterized by depression of the vital force, and accompanied by vitiated nutrition. It is a mistake to suppose that a warm, humid, relaxing atmosphere, can benefit pulmonary disease. Cold, dry, and still air, appears a more rational indication, especially for invalids born in temperate regions. The climate of Naples is the most dangerous throughout Italy, for persons suffering from affections of the respiratory organs.

From the preceding summary of the characters manifested by the different Italian climates, it will be seen, that however useful they may prove in other complaints, one more likely to act beneficially in pulmonary consumption might easily be found within the United Kingdom.

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